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The Canadian Horticulturist

JANUARY, 1906

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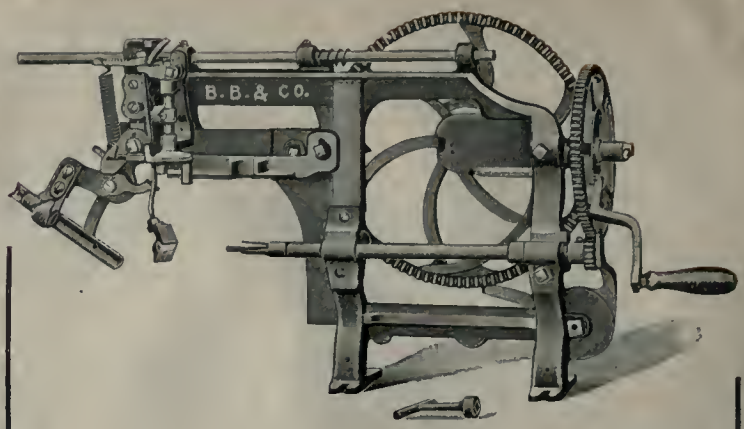

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Co-operation as Practised by Fruit Growers

Prof. J. B. Reynolds, O.A.C., Guelph, Ont.

THE inevitable conclusion from last year's experimental shipment of fruit from Ontario to Winnipeg, pointed to the urgent need for co-operation among fruit growers in practically all the branches of their business that are concerned in the handling of the fruit. This led me this year to make some inquiries respecting packing houses and co-operation. In this inquiry I have visited a number of places in Ontario where co-operation has been tried and a few points in the States. Some of my observations and conclusions on this subject will likely be of interest to the readers of THE CANADIAN HORTICULTURIST. I shall deal with the matter under two heads: (1) organization; (2) equipment.

Organization: Where co-operation has been established I found either a co-operative association, properly so-called, or a joint stock company. The co-operative association is organized under a special provincial act, and is empowered to own necessary property in connection with the business for which it is organized. The joint stock company may have all the features of the co-operative association and has in addition all the powers and privileges granted to the joint stock company under the provincial charter. The latter form of organization is rather more ambitious than the simple co-operative association. While it may not suit most localities, it seems to be a pronounced success in one locality that I visited, namely Thornbury. The banker who does the business for the company expressed his approval of the principle of the joint stock company for the purpose of the fruit growers. The powers of the company are such as will enable them to meet all demands of the business as they arise, since the amount of stock subscribed may be made sufficient to build or purchase various parts of the equipment necessary in the business, so that under progressive and careful management there is greater chance of success in handling, in packing, in storing, and in marketing. Mr. J. G. Mitchell, the enterprising manager of the Thornbury Association, is convinced that he has solved the problem of co-operation among fruit growers. Ordinary co-operation had been attempted time and again in that district without success, but now, he claims, the investment of a small sum of money in the business interests each individual shareholder to a degree that is not to be expected under ordinary co-operation.

NEW YEAR THOUGHTS

How the retnrning days, one after one,
Come ever in their rhythmic round, unchanged,
Yet from each looped robe for every man
Some new thing falls. Happy is he
Who fronts them without fear, and like the gods
Looks out unanxiously on each day's gift
With calmly curious eye.

—Archibald Lampman.

One rather difficult problem in organization is that of holding members together, so that they act co-operatively, and not singly, in all branches of the business. It is needless to say here that farmers do not sufficiently recognize the necessity for co-operative action. Perhaps they are too much imbued with the spirit of independence and self-reliance. However that may be, it is admitted as a great difficulty, wherever I have been, to secure complete co-operation. For instance, at Fennville, Michigan, members of the co-operative association there had been approached by fruit buyers and offered prices in advance of those they were securing through the association. The ostensible object of this offer is to break the association and subsequently to have the farmers at the mercy of the buyers, as they were before co-operation was established. Some of the members of the association at Fennville had succumbed to the temptation, and I found no business being done at the packing house, partly on this account.

Various devices are invented here and there for the purpose of keeping the members together and inducing them to pack and sell only through the association. The difficulty of securing co-operation among a large membership has induced most of the associations to limit their membership. At Forest the membership has been reduced to a comparatively small number this year by the establishing of a new clause in the by-laws, that requires members of the association to spray their fruit at least four times during the season. At Thornbury, however, the joint stock company is found to be a sufficient bond among the members. The financial interest in the concern, however small the investment may be, and the prospect of a dividend, creates a lively interest in the prosperity of the company. In addition, a by-law providing that members of the company who sell their fruit privately shall be entitled to no dividend, serves as a deterrent upon independent action. As a consequence the membership at Thornbury is increasing, while the tendency at other points is to diminish the membership and reduce it to a comparatively small number of interested and enthusiastic growers.

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When I commenced this year's inquiries I was of the opinion that a packing house of special design would be advisable for the purpose. Having seen a number of houses where packing is being done, I have come to the conclusion that no special form of building is required. Plenty of floor space of suitable shape, conveniently situated, seems to be the principal requisite. Two floors are advisable, the lower one for receiving, packing, and shipping the fruit, and the upper one for storage of packages.

Besides the packing house, a storage house is advisable. In districts where summer fruit is grown extensively, an ice storage is an important feature in the business. If the fruits are shipped daily, that is, received and packed and shipped the same day, there is perhaps little need for cold storage. At Gypsum, Ohio, where I found the best equipped and best managed packing house of all those that I visited, there is no cold storage, although tender fruits, such as peaches, plums and pears, are the principal output. The fruit is packed immediately on delivery and is stored in the refrigerator car without delay. In this instance, as in many other instances, the refrigerator car takes the place of the refrigerator chamber.

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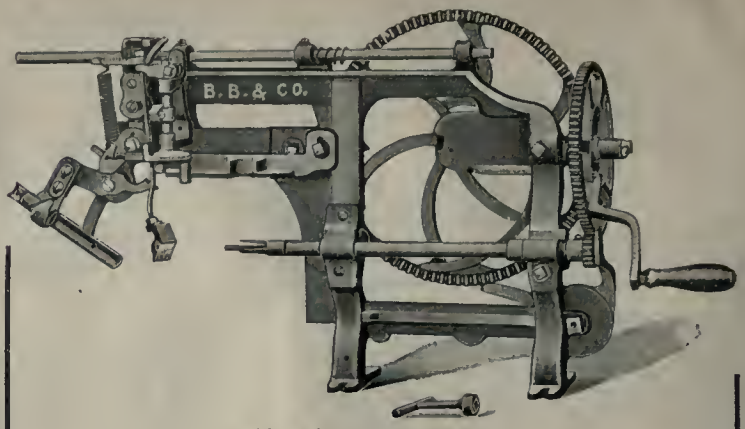

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fruit should be held by the owners until ready for use if the best ultimate results are to be reached. If green stuff is put on the market, such as Ben Davis apples are in December, it makes an unfavorable impression. The grower or packer should be the best judge of the fitness of the fruit for the market. If the grower or packer does not hold the fruit until ready for use, he has no reason to expect that anyone else between him and the consumer will be interested enough to do so. As a result of immediate shipping much unripe fruit is being sold to consumers in Europe and in the west, and an unfavorable impression is being created. To store fruit for the winter, the associations may rent space in large city storage houses, or they may construct storages of their own.

The Georgian Bay fruit growers have constructed a building—a combined packing house and storage house of good pattern. This building is 100 feet in length and 40 feet in width, and consists of a basement nine feet high and a storage and packing house 13 feet high. The basement, as well as the storage house above, is intended for winter storage. The ground floor above the basement is divided into two parts —one part, about 25 x 40, consisting of the packing house proper, the other part, 75 x 40, consisting of the storage house. The walls are concrete, 10 inches thick, and from the ground floor to the first floor the wall is insulated with one inch lumber, tongued and grooved, inside the concrete, with four inch space between the lumber and concrete—this space being filled with planer shavings.

The building is well provided with windows, and, in addition, for ventilation two large flues, one near each end of the building, have been provided, running from the basement ceiling to the garret and extending some six feet above the garret floor. As these flues pass through the storage chamber between the ground floor and the first floor, slides are provided that may be opened or shut as desired for change of air in the storage chamber. When the windows in the basement are opened a strong current of air passes up these flues and effects a rapid change of air and affords a means of controlling the temperature of the chamber. It is hoped that by means of the thorough ventilation and the well-insulated walls the temperature can be kept at about freezing point throughout the winter. The company are storing all their winter fruit and expect to hold it until they judge it fit for use. In order to enable all the members of the company to hold their fruit, arrangements have been made with the bank to advance payment on the fruit stored, at the rate of one dollar per barrel. The bank loans the money to the company on security of their warehouse receipts.

In September, packing houses in western Michigan and in northern Ohio were visited. In western Michigan I found nothing at all in advance of what is being done at different places in Ontario. Some of the associations, as at Fennville, Benton Harbor and Bangor, have built their own packing houses, while others, for the time being, are renting space. The organization of these companies is generally co-operative, and all on much the same plan as the co-operative associations in Ontario. By far the best equipped and best managed packing house that I visited in the States is that at Gypsum, Ohio, managed by Mr. W. H. Owen. The packing house there was built for the purpose, and has one or two features worthy of note. It is alongside of the railway track, so that fruit can be loaded directly from the packing house on to the car. The depth of the building, from the track back, is 52 feet, not including the shed. The width, parallel to the track, is 150 feet. The depth, 52 feet, is said by the manager to be about right to allow room for the ungraded fruit at one side, for grading in the middle, and for shipping at the opposite side next the track. This width is divided into 24 feet for the delivery floor and 28 feet for the grading and shipping floor. The latter floor is three and a half feet lower than the delivery floor, and at the breast of the upper floor the grading tables and machine graders are placed. The width, 150 feet, is proportional to the amount of business done. For a smaller business this width should be less, but the depth, 52 feet, allows just enough space for turning over the fruit from the grower to the car. Above this floor there is a second floor for empty packages.

I might add a word or two with regard to the handling of the fruit at Gypsum. Most of the fruit consists of tender varieties, such as peaches, pears, and plums—peaches being the principal crop. For peaches and pears they use almost entirely machine graders of the type known as the Rope Sizer. I was much impressed with the efficiency of these machines, and am convinced that they could be used to advantage in any of our co-operative packing houses for grading apples and pears particularly. These graders are operated by foot power, the operator sitting at the upper end of the machine and at the same time feeding the fruit from the hopper into the grooves of the machine. At the different grades attendants stand removing undesirable specimens of fruit, such as bruised, imperfectly formed, and overripe fruit. The machine grades very accurately according to size.

Receiving Fruit at the Warehouse of The Chatham Fruit Growers' Association

In most of the packing houses on the other side I was surprised to find that bushel baskets were used for shipping peaches. These peaches were principally of the Elberta variety, and, therefore, were fairly well adapted to the large basket. Where customers asked it or with softer varieties the 12-quart or smaller baskets were used.

Mr. Owen drew my attention to the fact that they made no attempt to "face" their baskets of fruit. The peaches or other fruits were left at the top of the basket exactly as they happened to fall without the slightest attempt at selection, even in the matter of color. Mr. Owen claims that only by doing this can they secure the confidence of their customers, for by making no attempt at facing the surface of the fruit represents in every particular the contents of the package. Any purchaser securing one of these packages of fruit suffers no disappointment as he penetrates farther and farther into the package. I notice that in packing apples in barrels in various packing houses in Ontario the custom is to face the head of the barrel very carefully by selecting, not the largest fruit, but fruit of uniform size and good color. Mr. Owen would not do this, and claims that by refrain-

ing from doing this he creates a greater feeling of confidence between himself and the consumer.

In the disposing of the fruit, the invariable practice at Gypsum is to sell direct to the dealer. The manager quotes his price to the dealers, by letter or telegraph, and receives from them orders for certain quantities and certain grades of the fruit. So complete is the reliance of his customers on the honesty of his packing that they regularly resell fruit by description before they receive it.

There are no conditions that would make co-operation successful, that I could observe existing in northern Ohio, that do not exist in Ontario. So far as I can see the spirit of co-operation is the first essential; whereby members are willing occasionally to sacrifice some possibly temporary advantage that they may gain by independent action, to the permanent interests of the association. In order for this feeling to exist there must be complete confidence among the members of the association with one another and with the officers. The success of the association depends, above all, on the enthusiasm and the business ability of one or two men in the district. As a usual thing these men have organized the association and in some way or other manage it. They foster this spirit of co-operation and, by their untiring efforts and business ability, they make the thing a success. Wherever co-operation has been undertaken a man of this sort has always had the guiding hand. Success in co-operation, therefore, does not depend on outside conditions so much as on the men who engineer it.

I must express my indebtedness to those from whom I have obtained the suggestions that are here embodied, particularly Mr. Owen, of Gypsum, Ohio; to Mr. Johnson and Mr. Lawrie, of Forest, Ont.; to Mr. Mitchell, of Clarksburg; and to Mr. Sherrington, of Walkkerton, Ont. Mr. Sherrington, especially, is deserving of great credit, not merely for having organized successfully an association in his own district, but for his enthusiasm and untiring efforts in organizing associations elsewhere in Ontario wherever he has been invited to assist in the work.

Why Fruit Growers Should Co-operate

THE method of handling the apple crop by which the buyers and men go around and do the picking and packing, is utterly unsatisfactory. It causes loss to the grower and to the buyer. Much of the fruit is packed so poorly as to seriously injure the reputation of Canadian apples. This system is the cause of a large proportion of the complaints concerning our fruit made by the British importers. During the past season THE CANADIAN HORTICULTURIST has given the matter a great deal of attention. It has found that not the growers only, but leading buyers as well, are thoroughly dissatisfied with this system; while the Dominion fruit inspectors condemn it vigorously.

Co-operative Grading and Packing as Done at Chatham

Great loss to the growers, also, occurs by the fruit passing through the hands of too many middlemen. The remedy lies in greater co-operation on the part of the growers, who should sell direct to the retailers in Great Britain. By doing so they would receive twice as much for their fruit as they usually obtain. Even the co-operative associations already established have not made as much from their fruit as they might had they sold direct to the retailers instead of to the wholesalers. These, and other points germane thereto, are touched on in this article and in those immediately following. Methods that have been adopted by a number of the leading co-operative associations in Ontario and the States are described in the article by Prof. J. B. Reynolds Some of the sources of loss to the growers that arise from the fruit passing through the hands of numerous middlemen will be found described in the article dealing with the marketing of fruit.

The defects of the method of gathering the crops, by which the buyers send gangs of men around to do the picking, grading and packing, are so apparent that even the buyers are outspoken in its condemnation. "One of the worst features of gathering the crop in this way," said Fruit Inspector P. J. Carey, of Toronto, to THE HORTICULTURIST, is that very few of the apples are picked at the proper stage of maturity. Some of the best winter varieties are harvested before they have obtained their color or other characteristics, while the earlier sorts are past marketable stage in other orchards before the gang can reach them. In many instances a great percentage is blown down or sometimes damaged by frost before the pickers arrive.

"Thousands of bushels of apples last fall were not put on the market in the proper season. One large firm had 71 gangs packing in different parts of Canada from Hemmingford, Quebec, on the east, to Sarnia on the west and Penetanguishene on the north. These gangs were made up of men of different occupations, and it could not be expected that satisfactory work would be done by them all.

"Every farmer and fruit grower should pick his own crop and then all would be harvested at the right stage. It is too bad to have the farmer waiting for the pickers to come while heavy winds blow down the best fruit. Our co-operative associations are doing splendid work. Were more of them formed many of these defects would disappear.

A BUYER'S VIEWS

"Were the growers to pick their own apples and to store them under cover, as they do their other farm crops," said Mr. Eben James, of Toronto, the well-known buyer, "one of the chief sources of loss would disappear. In addition to this the dealers should erect temporary houses, or secure packing sta-

tions at the different railway points from which they purpose shipping.

"In the past few years the apple trade has undergone various changes. Some have been for the better, while others have been for the worse. Honest picking has greatly advanced since the Government took measures to prevent fraud. The old practice of allowing the farmer to pile his fruit under the trees until the buyer got time to pack them is also less common. Experience proves that fruit left lying under the trees for even 24 hours is seriously injured in quality.

A few years ago barrels cost about 18 cents, and labor could be obtained for $1 a day, making the cost of packing about 15 cents a barrel, or a total cost of 33 to 35 cents in preparing a barrel for export. In time competition became so keen that the buyer was not satisfied to purchase by the barrel, but began buying orchards in lump and taking chances on wind and weather. In some cases he bought below the market value, and in others paid double what the fruit was worth.

"Under this system, when heavy winds or early frosts come, the fruit is damaged and the buyer, in his attempts to make something out of his deal, often exports fruit that should go to the cider mill or to the evaporator. This results in serious injury to the Canadian apple trade, and gives profits only to the barrel manufacturers, the laborers and the steamship companies.

"Every few years," continued Mr. James, "the dealers get a severe 'scalding,' and they are more cautious until a good season comes, when they again lose their heads. Cooperage stock has doubled in price, and two years ago the unreasonable price of 50 to 60 cents for barrels was reached, and at that price they were difficult to obtain. During the past season we were able to get the eight-hooped barrel at 35 to 38 cents.

"The advance in the cost of labor has added to the troubles of the large buyers. Packers get $15 to $18 a week with board, rain or shine, while the pickers work for $1.25 to $1.50 a day. Even at these wages, sufficient men are not available to properly harvest the crop.

"Another serious drawback in handling gangs is the fact that farmers refuse to board the men. The dealer, rather than lose the orchard, makes the contract under those conditions and the men are forced to stay at hotels. Time is lost by the men getting to and returning from work, and frequently some of them stay up late drinking instead of resting, and the next day they are not in shape for a full day's work.

"These drawbacks would disappear were the growers to harvest their crops and deliver them at a central packing house in barrels or crates on spring wagons. In this way sales would be made on the out-turn when put up as XXX or XX. Another satisfactory method would be to have the packing company do the work at so much a barrel, making sales f.o.b., or shipping through some reliable commission house on consignment. In this way the expense to the dealer would be reduced at least 50 per cent., and the grower would receive more for the fruit. The responsibility would then rest on the producer to see that none of the crop was lost. Besides, much of the trash that is now exported would be sent to the cider mill or the evaporator, where it properly belongs, and only the marketable crop would be forwarded.

"It is utterly impossible," concluded Mr. James, "for the average dealer to secure help to handle the fruit as it should be handled in the limited time available, and do enough business to make a working profit. The apples can be thrown into barrels for storage, but that means great shrinkage and double expense in packing."

Fruit of the Chatham Fruit Growers off for the Old Country

ANOTHER BUYER'S VIEWS

"If I could get all my requirements from co-operative associations," remarked Mr. R. J. Graham, of Belleville, "I would not put any gangs out. Every farmer should pick his own apples. Some growers claim they cannot get men to do the picking, but it should be as easy for the grower to get five men as it is for a buyer to get 500. It would be as reasonable to ask a miller to harvest his wheat as it is to demand that the apple dealer must harvest the apples he buys.

"During the past season I had over 70 gangs at work in the apple sections of Ontario and western Quebec. It was impossible, under such circumstances, to prevent some apples being packed that should have been thrown out. In some cases the apples I had had packed stood in the orchard for a month before the grower took time to deliver them. By that time nearly every barrel was slack. The contract calls for immediate delivery, but various excuses are given by the growers for failure to live up to it. As a rule the farmer cannot pack properly, and the best plan would be to have central packing houses to which the producers could deliver the fruit.

"Each gang," continued Mr. Graham, "consists of a foreman, who has had several years' experience, an assistant and four or five pickers. If a picker does good work for one season, he is made first assistant the following year. The wages run $12 to $18 a week and board for the foreman, $9 to $12 for the assistant, and $1.25 a day for the pickers.

"Great quantities of apples are lost annually because of lack of accommodation at the shipping point. At many stations the barrels are piled on the ground in the sun and rain for days, and as a consequence many slack barrels are found. With central packing houses this evil would be removed and the apples would be kept under cover in proper condition."

This system of handling the crops is responsible for the inferior condition of much of the fruit that arrives at Montreal. Out of 104 cars that reached that port to make up a cargo early in October, the fruit in 38 cars was reported by the Government inspector as being in poor condition. Improper marking is also common. In one car of about 160 barrels, 10 were found with deceptive marking.

In a recent interview with the manager of one of the leading steamship lines, THE CANADIAN HORTICULTURIST was informed that a great quantity of good fruit reached Montreal in poor condition. He had seen barrels opened in which the fruit was six or eight inches below the head. It seemed to have been dumped into the barrels when hot and not packed or pressed.

Chatham Fruit Growers' Association

W. D. A. Ross, Secretary-Treasurer

THE business of the Chatham Fruit Growers' Association for 1905 was the most successful in the history of the association. Prices were the highest that have been realized, and there were practically no losses. This association started business nine years ago with a membership of about 12, and shipped two carloads. At that time each member packed his own fruit. In 1902 the central packing house system was adopted, and in that year 42 carloads were shipped. In 1903 the crop was a failure, and we shipped only seven cars. In 1904 we shipped 43 cars, and this season another off crop, 26 cars.

W. D. A. Ross

During this time the membership has gradually increased till it has reached almost 100, and it will be necessary to increase our packing facilities to accommodate the increasing membership. The association has plans under consideration with that end in view.

Before members are admitted their orchards are inspected and nothing but men with first-class orchards are accepted. In the spring of 1902, the association purchased a large power spraying outfit, run by a gasoline engine. It is used exclusively for spraying members' orchards. Three men and a team are employed to run the outfit continuously for three months during the spraying season. This year, in addition to the Bordeaux, 75 barrels of crude oil were used in fighting San Jose Scale. Excellent results followed its use. This co-operative plan of spraying is very effective and equally satisfactory, as the members have not always the time to attend to it when it should be done, and many lack experience in the work. The cost of spraying is charged to each member and deducted from his fruit returns in the fall. Those who are spraying regularly are reaping handsome returns from their investment.

The fruit is handled on a mutual basis—averaging returns for similar grades so that no one gets a preference, and the losses, if any, are distributed. This season we made three grades of apples: Fancy, which netted the grower $2.50 to $3.00 a barrel; XXX netting $2.03 on the average; and XX netting an average of $1.41. These prices are net after paying all expenses for management, packing, barrels, etc.; everything except the picking is included, and we feel proud of the record. In addition to the apples, a large quantity of other fruits were handled, and they turned out equally well.

There is a healthy rivalry springing up among our members in their endeavor to excel, and since the best orchards in the association are just coming into their prime, a splendid future is anticipated. Several members are receiving cheques of $500 to $1,000 from orchards that previously, if sold at all, realized only $200 to $300 a year.

One of the chief elements of success in our association is the hearty co-operation of the members in everything that promises to advance its best interests. As secretary-treasurer, I have been ably assisted by an efficient board of directors, and an energetic business representative, Mr. W. A. McGeachy. We strongly recommend the co-operative system of handling fruit as our results show, that it is the only method that will ensure a uniform grade—special brand—and a good business connection.

Some Notes from the Experimenters

SEVERAL of the well-known fruit growers, who are in charge of some of the fruit experiment stations in Ontario, gave results of their work at two special meetings, held for that purpose at the time of the Ontario Horticultural Exhibition, in November.

The superintendent of the stations, Mr. Linus Woolverton, of Grimsby, pointed out that we already have co-operation in spraying, packing and selling, but that the curse of many orchards is the numerous varieties they contain on a few acres. He claimed that by co-operation in planting and by the growers paying attention to the work of the experiment stations much could be done that would result in fewer and more desirable varieties being kept in the average orchard.

In talking about desirable novelties, Mr. Dempsey alluded to the fact that the horticulturists 30 or 40 years ago, who produced new and profitable varieties by crossing, had been lost sight of. He claimed that such men as Saunders, Dempsey, Arnold and Macoun were as worthy of recognition as Burbank. Although favoring the introduction of new varieties he advised the growers to be careful in planting them, as different varieties are suited to different soils. Of the newer varieties Coo's River Beauty, which came from the California Experiment Station, was one of the best. York Imperial, Windsor Chief and Downing's Winter Maiden Blush are also promising sorts.

In the discussion that followed Mr. W. T. Macoun, of Ottawa, said that the hardiness of the stock in top-grafting seemed to have no appreciable influence on the hardiness of new wood. A weak trunk is a great defect.

The subject of hardy fruits was dealt with by Mr. Harold Jones, of Maitland. It was stated that varieties that succeed in Durham and Northumberland may fail east of Kingston, although there is not much difference in temperature. In that county Fameuse, Scarlet Pippin and McIntosh Red are the standard varieties. They withstand the severe winters but are subject to spot unless thoroughly sprayed, and all come in early in the season. A profitable variety to cover the season from Christmas on is wanted. Spy has been found to be hardy until it comes into full bearing, but after one or two crops the trees die. Ontario was thought to be the desired variety, but the winter of 1903-04 killed almost every tree. Baldwin and Greening are not hardy. Russet is the most profitable winter variety for that section, but shrinks badly in ordinary storage. The Northwest Greening is hardy and prolific, but lacks quality. McMahon White is desirable because of its vigorous growth and its excellence as a stock on which to top-graft other varieties. It forms an extra strong crotch and is hardy. Milwaukee and Scott's Winter are promising varieties for cooking. Others that are uncertain bearers or lacking in quality are Salome, Baxter, Blue Pearmain and Delaware Red.

In the report of the Transportation Committee Mr. Bunting said that it taxed the railway companies at times to handle the fruit in the Niagara peninsula. The committee had asked the railway commission to attend to the matter and their request was not overlooked.

Winter Work for the Amateur Florist

John Cape, Hamilton

WHAT should we amateur gardeners do in January? No outside work is possible. The gardens are sealed up. Jack Frost holds full sway. Plant life is sleeping the long winter sleep; and those of us who have no house plants are waiting patiently, or impatiently, as the case may be, for the coming of spring; that annual miracle, the renaissance of plant life. It will be three months yet ere the sweet modest little snowdrop peeps forth, whispering to us the welcome tidings that winter is passing and heralding the coming of warm weather and nature's awakening.

What then is there for the amateur florist to do in January? Much, indeed, in the way of planning, mapping and other preparation for the future. It is in the cold dark days of winter that we amateurs grow the most charming flowers (in our minds). It is then we build our castles in the air, and dream dreams of the wonderful achievements we are going to compass in our gardens next summer. Now it is that we bring out our seed and shrub catalogues, pore over them and study them, and, under the seductive influence of their alluring descriptions, and gorgeous illustrations of plants and flowers, shrubs and trees, new and old, we plan new designs and elaborate effects; make out our lists, and review them and renew them, and alter them to suit our area and our pocket-book, until finally we settle on the absolute requirements and make the orders for seeds and plants. The seeds should be purchased immediately, and the plants later on.

What a charming occupation this is! Every grower wants some plant or flower that he didn't have last year. That white Turk's-cap lily that was seen at St. Catharines; that pale blue larkspur, which was a conspicuous feature at the Grimsby show, or that Rocky Mountain columbine that Dr. Fletcher described so vividly. Aye, and we must not forget that Colorado blue spruce for the lawn, or the feathery Japanese maples at Niagara Falls Park, that caused us to break the tenth commandment, and covet and desire other men's maples; and that hardy chrysanthemum we saw in Hamilton, a great bush of golden glory that, once planted, needs but little afterthought or care, increases year by year in bulk and beauty, and blooms on forever.

Besides, that color scheme for the south border has to be thought out, and we need to settle what annuals are to supplement the perennials there, and what shall be grown this year especially for the show in September. With such work as this it can readily be understood how easy it is to have our hands full of garden work in winter as well as in summer.

PURCHASING SUPPLIES

When the lists are made out the question is:—Where, and from whom shall we purchase our supplies? Aye, there's the rub! Catalogues pour in upon us in bewildering numbers. Catalogues of seeds, catalogues of bulbs, catalogues of trees, of shrubs, of vines, of perennials, of annuals, of native plants, of ferns, of orchids, and of "everything for the gardener"! Catalogues great and catalogues small; catalogues modest and catalogues—well—not at all! All and every kind of catalogue, offering all and every kind of growing things, or things to grow. From Germany, from Japan, they come, and from all parts between. The selection of the necessary requirements from such a mass of material is interesting, and will prove to be more beneficial employment for the winter evenings than working out Alice's riddles in the *Ladies Home Journal*.

Experience teaches us that no one firm has "Everything for the Garden," although some profess to have. There are specialists in horticulture, even as there are in other lines of industry. Where to get the best roses, is often where nothing else is grown. A firm may be famous for its pansy seed, and yet be unable to fill an order for half a dozen varieties of lilies. When the list of our requirements has been settled we have to study where the items can best be procured, and make out and send our orders, so that we may get our seeds now and our plants later. If we do not do this systematically and now (do it now!) when we cannot work out of doors, we shall inevitably be "left" when the springtime, work-time comes. This is what we can and must do in January, and this is what January is for—to the amateur florist.

Prepare Your Bedding Plants for next Summer

JANUARY is the best month for starting a great number of the most beautiful bedding plants for the garden next summer. Amateurs who try to grow these flowers are completely discouraged frequently by their lack of success. There is no reason why such failures and disappointments should occur. In almost every case the cause can be traced to lack of knowledge regarding the proper time to start and the proper methods to follow in preparing the plants for bedding operations. A fine show can be made with very little expense and most of the work can be done during the winter months when other labors are not so pressing.

Bedding plants are grown with great success in the Allan Gardens, Toronto, where Mr. E. F. Collins is an expert in their culture. "In preparing plants for bedding," said Mr. Collins to THE HORTICULTURIST recently, "the growth of the different specimens must be studied. The main object should be to have the plants grow as quickly as possible, and just reach the proper size at bedding time. The slow growing sorts may be started as early as December, while others that grow rapidly will be ready if not started until April.

"Geraniums, when taken up in the fall, should be potted and placed in a shed. A thorough watering should be given and then they can be allowed to dry out until all the leaves drop. They should then be well cleaned and again thoroughly watered to induce new growth. In this way young shoots, suitable for making cuttings, will be developed by January. When this first crop of cuttings has been removed, the old plants can be set to one side and again well watered. Another batch of cuttings will be ready in about six weeks. Under ordinary treatment the same old plants will grow rapidly after this and make fine flowering plants by April or May.

"Cuttings are best started in coarse, clean sand with good drainage. If only a few are needed they can be put in small pots or in boxes. When large quantities are required, flats can be used. An inch and a half or two inches of sand is sufficient, and the cuttings can be placed as close together as possible. If they are

A Beautiful Vine for an Amateur's Greenhouse. The Bouganvillea Sanderii, as now Growing in Mr. Alexander's Greenhouse.

placed around the edges of the pot or box, growth is encouraged and more rapid development results. The cutting should be made into the hard wood, but not lower than the second or third joint. The cut should be just below a joint and square across so that the base sits flat on the sand. A common fault with amateurs is to 'hang' the cutting. The earth is not packed solidly around the stem but merely pressed around the upper part, leaving a space around the base. Plants set in this way soon wilt and rot off. When light sand is used a thorough watering after setting causes the sand to settle around the cutting and drive out all the air.

"When these young plants are well rooted they should be put in two and a half or three inch pots. Ordinary potting soil can be used, and it should be packed firmly. Sometimes the plants can go from these pots to the beds, but the strong growing ones should be reset to four inch pots in April. Two or three weeks after potting the plants should be pinched back to give a strong, dwarf, hardy plant. It is bad practice to pinch or cut back a geranium at the time of repotting, as a check is given to both ends at once. It is best to do the pinching some time after repotting. Geraniums require bright sun and plenty of air. Many amateurs fail because they attempt to grow them in the shade. Sunshine and air induces stocky growth and numerous flowers.

"The best coleus plants, too, are obtained by propagating a few cuttings through the winter and throwing away the old plants. Cuttings from the stock brought in in the fall become sickly before spring. Better results can be had by taking the tips of the first cuttings and resetting them. In this way the plants become tougher and stronger and more suitable for bedding purposes. After resetting about three times new cuttings may be taken in April, and first-class bedding stock will be ready by June.

"Abutilons, or flowering maples, are slow growers and must be started early in January.. The same treatment as for geraniums suits them, but they must be kept from the sun for a few weeks after setting. Vincas, or periwinkle, too, should be started in January. Tuberous begonias may be started from seed in January, or tubers can be obtained as late as April. For propagation from seed a light sandy soil is needed. A thorough watering should be given before the seed is sown. They are hard to raise without a greenhouse as there is not sufficient moisture in the atmosphere of an ordinary room. Where ferns thrive begonias also do well. The Centaurea candidissima, or dusty miller, sown in January, and the Centaurea gymnocarpa sown in March, attain suitable sizes by June.

"Ageratum and irisenes root all along the stem and need not be cut off at the joint. They can be started in March or April, in the same soil as the coleuses. Anthurium variegatum makes a beautiful border for begonias or cannas, and may be propagated readily in the house. When the tip is cut off the flower stem, young shoots appear along the stem. These, when two inches long, can be put in sand in March and be large enough for bedding. Stevias should be started in January to have a good plants by June. The old wood should be cut off when the plants are taken in, and soon young shoots come. These shoots grow readily and much more quickly than the old wood."

An Amateur's Greenhouse in January

A. Alexander, Hamilton, Ontario

TO the true flower lover, that is one who loves flowers all the year round; not only during the period when the snowdrop and crocus break the bars of their winter prison-house in early spring, to the season when the last of earth's autumnal beauties succumb to the killing breath of "Jack Frost," but who, also, all through the dreary, flowerless time of winter, is longing for flowers,

The Flower of the Bouganvillea Sanderii Vine

to such a one the title of these homely notes will bring up pleasant memories or rainbow-colored hopes. To be able to step from one's dwelling in this month of January into a temperate or summer atmosphere laden with fragrance, and full of the beauty of flowers and foliage, is something worth possessing, and once tasted of, will be made a permanent adjunct to the home, however humble. My purpose in writing this short article for THE CANADIAN HORTICULTURIST is to urge my brother amateurs, who love flowers for their own sakes, to make a great effort to secure this pure and unalloyed and elevating pleasure.

My first greenhouse was a very unpretentious affair. It was largely formed of old church windows. I was my own glazier and bricklayer. It was 20 feet long by 12 feet wide, was heated by an old coil of two inch pipe, and was just high enough inside that, with a little care I did not knock my head against the rafters every time I passed along among my flowers, and what flowers they were! Such geraniums and primulas and cyclamens I have never had since. My friends who saw my flowers then, and see them often now, say so. Then, I had three varieties of passionflower which covered the entire roof (ridge) with innumerable blossoms, and specimen plants of *Streptosolon Jamiesonii* and of *Begonia Rubra;* the former with its immense drooping clusters of orange searlet bloom, and the latter with a great wealth of scarlet flowers that were produced all the year round, which formed a picture that yields me great pleasure even now. However, it was condemned because, not being attached to the dwelling, I had to get out of bed many times during severe winter weather when the outside thermometer was zero or below, and cross the yard to tend the fire.

My present house is nearly square, 24 x 22, and is built against the south wall of an addition to the dwelling. It faces south and is 18 feet high at the back and seven feet at the front. The roof is not at one angle, but there is a beam running across from east to west that makes a kind of "hip" at about one-third of the distance from the top. I have found this to be a mistake, as it is almost impossible to prevent a drip where the angle of the roof changes over this beam, and the house is too high, thus making it difficult to heat in severe weather. The only redeeming feature of the height is that it enables me to have *larger* specimens of some plants and vines than I could have in a lower house. It opens into the dining-room by glass door and window.

One of my favorite vines for the greenhouse is *Bouganvillea Sanderii* which was planted soon after the house was built. It is a very beautiful, free-growing vine—has no insect enemy that I know of, and blooms very profusely, being of a beautiful rose color. It is in bloom for about four or five months. It does best when planted in a bed or border. The smaller photo shows the details of the flower. The highly colored portions of the flowers are not petals but colored bracts, the flower proper being the inconspicuous white portion in the centre.

Last winter I had the misfortune to lose nearly everything in my house from an escape of coal gas from the hot air furnace in the cellar through careless plumbing. I had no bloom all winter, and this vine lost all its leaves. But now, it is sending out immense young growths, some of them already twelve feet in length. My house is heated by hot water from a coil in a sort of a self-feeder stove.

A January Scene in a Corner of Mr. Alexander's Greenhouse

Chinese Primula

This plant now in bloom, was grown from seed sown last June.

A corner of my greenhouse, as it looked a few days ago, is shown in the illustration. It may be called a symphony in white. The white is supplied from a liberal stock of Roman hyacinths, paper white narcissus and white Chinese primulas, the latter grown from seed sown last June. In a small packet of seed I had about sixty lovely plants of fine colors. One of these plants is shown. I have always had great faith in the begonia for the amateur's greenhouse. There is such a great variety, and nearly all of them easily grown, and the plants themselves are so free from insect or other pests that they are most desirable, for they are decorative, whether in bloom or not. One of the most handsome is Begonia velvetina. In the picture of the Bouganvillea the plant in the background against the back wall is *Begonia rubra*, which in three years from planting covered a portion of the wall 18 feet by 14 feet, or an area of 252 square feet, and was in bloom continuously for years, until it suffered as above described, but it is now again in bloom and will soon cover its old space. To the right of the Bouganvillea and growing in the same bed is another *Begonia—President Carnot.* It was twelve feet high and laden with its immense clusters of bloom when the photo was taken. At the present time I have Begonia incarnata, Paul Bruant, Alba and Metalica in bloom, besides some others whose names are unknown to me. Cypripedium insignis is the only orchid I have in bloom now.

I noticed what surprised me last winter, when the gas was playing havoc with my plants, when the hardiest geraniums lost all their leaves, that my ferns, including the most delicate adiantums and others, never looked better. The illustration shows a specimen of Nephrolepis Piersonii about 18 months old, from a sucker that seemed to thrive upon the gas. Photo 10 shows a specimen of *Pteris tremula* which is one of several that I found growing in a damp corner of the centre bed in the greenhouse. When I lifted it it had two fronds about an inch long and now, less than two years after, I have some fine specimens of this elegant fern from self-sown spores. This is one of the many interesting accidents that we came across in our little greenhouse experience.

A Fern that Throve in Gas

This Nephrolepsis Piersonii fern, 18 months old, was grown from a spur and did well in a greenhouse, where many other plants were killed by an escape of gas.

I will say but little more at this time, as I have no intention to speak of greenhouse construction or heating, or of the mode of cultivating certain plants; all I would add is that I get the best soil I can get, and I often wish that some of the commercial men would take in hand to supply us amateur florists at a reasonable figure with the potting soil we need for general purposes. By so doing they would increase the sale of many of their plants.

I am particular about the pots I use—I wash them inside and out every time they are used, and, as far as I can, keep the atmosphere around my plants not only with the proper heat, but also the requisite moisture and air. With these the plants must grow and thrive for it is the law of their nature.

I would close these rambling notes by saying that the main feature of my greenhouse is the large bed in the centre 15 ft. by 14 ft. and the 3-ft. border along the back wall enabling me to have a wonderful development of such plants as fuchsias, abutilons and begonias and others planted therein.

Plants should have a rest, and that is accomplished by withholding water, lowering the temperature in which they grow and not giving them any stimulant."—(E. F. Collins, Toronto).

It is Norway Spruce

J. W. Smith, Winona, Ont.

In the November issue of THE HORTICULTURIST we noticed the picture of a hedge on the lawn of Mr. J. W. Smith, of Winona. What kind of hedge is it? How long has it taken to grow and how old were the trees when put out?—(R. W. O., Collingwood, Ont.)

The hedge is Norway Spruce. When planted the trees were 30 to 36 inches high and about four or five years old. This is the best height for planting, although they may be used when higher. When planting them 30 to 36 inches it takes seven or eight years for them to grow seven to nine feet high, providing it is sandy soil. They grow in most any kind of soil.

When they reach the desired height the tops may be cut off by drawing a straight line. The sides may, also, be trimmed to suit. This should be done after the hedge has ceased growing for

Pteris Tremula

the season, usually about August. About the same time it may be thinned, cutting the wood back within an inch of what it was the previous year, so that each year a new wood is left, on which buds form. This hedge was planted about four feet apart and is now 25 years old. It becomes thicker and thicker each year.

Plant flowers, even if it is not necessary to do so in your vicinity, or if flowers are a trouble and do not bring money. They will bring refinement and pleasure. —(N. S. Dunlop, Montreal, Que.)

The flower lover who has never reared her own plants and in turn been rewarded by the dainty blossoms they have borne, has missed a great deal of joy and pleasure.—(Mrs. W. J. McLenahan, Appleby).

Try Improved Lilacs Next Summer

W. T. Macoun, Central Experimental Farm, Ottawa, Ont.

NOW, when you are planning the surroundings of your home for next summer, do not overlook the claims for attention made by the lilac. There is no spring flowering shrub so popular, and none so easily grown. In fact, the old-fashioned variety establishes itself so readily and suckers so much, that it often becomes almost troublesome and in small gardens takes up too much room unless carefully watched. But no garden should be without lilacs if there is room for any flowering shrubs, and the improved varieties that are budded on lilac stocks are so fine that no one who loves flowers will allow the suckers to grow. Moreover, the varieties that are budded do not sucker as much as seedlings.

The improvement in lilacs has been very marked during the past 15 or 20 years, but comparatively few persons in Canada have yet planted the improved kinds. Unless the collection at the Central Experimental Farm has been seen it will be difficult to make anyone believe that, when the census was taken in the arboretum in the fall of 1904, there were 162 varieties in the collection doing well.

Charles X, which is one of the oldest of the improved varieties, is still one of the best and freest bloomers of its color, but the range in color now is so much greater than it used to be and the double and semi-double varieties, and those with twisted petals, make so many combinations that there is a large list to select from. The length of blooming season also has been extended. At Ottawa the blooming season of lilacs is from about the middle of May to the first week of July. By planting the different species and having a good range of varieties anyone may have lilacs in bloom for at least six weeks.

There are so many fine varieties of the common lilac that it is difficult to reduce the list to a few of the very best. The most satisfactory single white is Alba Grandiflora, a very free bloomer with a large loose truss and pure white flowers. Of almost equal merit three of the best double whites are Madame Casimir Perier, Madame Abel Chatenay, and Obelisque. Of single varieties in the various shades the following are very fine. Congo is about the best of those of the darkest violet or purplish red varieties, the panicles being of good size and the flowers very large, Prof. Sargent and Souvenir de la Ludwig Spæth are very much like Congo. Other dark-colored single varieties of great merit are Aline Mocqueris, and Charles X.

Fürst Liechtenstein and Jacques Calot are two of the best singles with rosy lilac flowers, and Lavaniensis is almost a pure pink. Dr. Maillot is a fine late variety. Two of the deepest colored and best double varieties are Charles Joli and La Tour d'Anergne, both being dark reddish purple or violet purple. A great deal of the charm of many of these newer varieties is in the contrast of the color of the flowers still in bud with those fully open on the same panicle. The varieties that are particularly attractive in bud, the buds having a rosy appearance are, Charles Baltet, Michael Buchner de Jussien, and Prince de Beauveau, all very fine sorts. The last named variety has a bluish tint when open making the contrast between bud and open flower very striking. Two varieties that are of particularly fine shades of lilac are Leon Simon and Comte Horace de Chisnel. Three other excellent varieties that are bluish when open are: Avel Carriere, Coudorcet and Boussingault. Linne is a very fine variety with twisted petals.

Some of the best of the double varieties of more or less pink or rosy color in bud or flower are Emile Lemoine and Jean Bart, of which, although mentioned last, at least one should not be omitted from a general collection. Taking into consideration the range of color we should select as the twelve best: Alba Grandiflora, Madame Casimir Perier, Congo, Prof. Sargent, Fürst Liechtenstein, Lavaniensis, Charles Joli, Charles Baltet, Leon Simon, Avel Carriere, Linne and Emile Lemoine.

In order to have a collection of lilacs that will give the length of blooming season already referred to, one should have in addition to the varieties of the common lilac, the following: Syringa oblata, which comes in just before the common lilac; Syringa Persica and S. Chinensis or Rothomagensis, which bloom at the same time as the common lilac. Syringa Josikaea, closely following the common lilac, S. villosa, blooming during the second week of June. Syringa Amurensis, starting to bloom about the beginning of the fourth week of August, and Syringa Japonica, which is not at its best at Ottawa until the first week of July.

Those Who Passed Stopped to Enjoy This Lilac Bush

This Persian lilac stands on the lawn of Mr. T. W. Todd, of Toronto. Last spring the tree was simply a mass of bloom. The blossoms were of a very delicate lavender, and the flower spikes were of extraordinary length, many of them being over two feet long. This beautiful bush was the admiration and wonder of Parkdale for many weeks.

Perennial Borders for Amateurs

Roderick Cameron, Niagara Falls South

HARDY perennials, when once planted, are constantly developing in beauty and size. A variety does not cost the purchaser any more than the tender individual plant from the greenhouse, that lasts but a season. With the exception of keeping them clean from weeds, they require but little care or attention for several years after planting, and then only to subdivide into many plants for use elsewhere. The varieties and color are legion. With a judicious selection in the first instance, a perennial bed or border may be kept bright with bloom and foliage from the time the frost leaves the ground in the spring until hard frost in the fall.

There are many important points to be considered in making a perennial border. First, there must be a familiar acquaintance with the characteristics of each variety, its likes and dislikes as to soil, situation, shade, moisture and light, and its period and length of blooming. Every plant has a character and gracefulness peculiarly its own, and when surrounded by a variety of similar plants, all equally graceful and interesting, the beauty of a well-arranged plot or border commands admiration from even the least observant passer-by.

It is sometimes a good plan, when the border is a large one, to intersperse some of the finer varieties of shrubs. In some cases vines may be employed to advantage.

The choice of the situation for the border is a very important matter. On small lots it should be made up against the line fence. Cover the fence first with chicken netting, then plant against it vines in variety. They will cling to the netting, thus saving tying. There are many instances where this practice would be to advantage in our cities, towns and villages. In front of this netting may be made the perennial border, preferably as irregular as possible in form. It should be dug two feet deep. As much barn-yard manure ought to be used as can be turned under. I believe in using a good coat of wood ashes every fall, spread broadcast over the surface after the old tops have been cut and cleared away from the border. It can be forked in in the spring with a potato fork. I also believe in making such a border in the fall, and planting it in the spring, as the young plants get established, and are better fitted to withstand the following winter.

Taste and skill in the arrangement of the plants is very essential. Discarding any attempt at formality, freedom and grace are two important points to be considered. There must, also, be some order and harmony. The plants ought to be graded from the back to the front in an easy and graceful manner, and if the whole border is seen at a glance, the colors of the contiguous plants should blend as nicely as possible. On the other hand, if the border is of a crooked form so that only one part is seen at one time, then harmony of color becomes a secondary matter.

The planting of a crooked border should always begin on the front row. Use all the smallest dwarf plants in this row, but a too strict line of uniformity of height should be carefully avoided. The plants for the first two rows should be of a mixed character, so that they will not all be in bloom at one time.

An excellent method in planting perennials is to use plants of about the same constitution, irrespective of their families, and preferably those that bloom at different periods of the summer. Care should be taken to select those that are not apt to rob, or clash with each other, and to plant three to six or more varieties in such a manner that the blooming of each distinct clump, or plot, will be prolonged as long as possible.

Most of the herbaceous plants can be used in this way to advantage, but there are some that are not suitable for inter-clump planting, such as the Rudbeckia golden glow, Helenium autumnale superbum, Pyrethrum uliginosum, Pyrethrum maximum, and other gross feeders and rampant growers. These should have a place for themselves near the back of the border.

It is advisable, when planting on the plot system, to arrange the plants in rows, parallel with the outline of the border. This facilitates the keeping of the border clean, makes it more easy to get at the plants for cutting and tying up, and simplifies the labelling of the varieties for the information of the public, which is a very important matter.

BULB DEPARTMENT

Questions Answered by Mr. Herman Simmers

Storing Gladioli

I grew some gladioli last summer and stored the bulbs in an ordinary furnace-heated cellar in the fall. They seem to be drying out too much. What should I do with them?—(A.L.C., Owen Sound.)

The way you are keeping your Gladiolus bulbs will not do. They should be kept in an atmosphere containing more moisture. If you have a room in the cellar that does not freeze, or if you could keep them in the same place that you keep such vegetables as carrots, beets and parsnips, they will come out in the spring much better. If you can secure a moist atmosphere where there is no frost you should have no trouble if the bulbs have been properly harvested.

Bulbs in Water

What bulbs can be grown in stones and water? What is the best time to start them, and under what conditions would I get best results?—(J. S. McP., Orangeville.)

Chinese Sacred Lilies are usually grown in this manner, and within the last few years the greater portion of the Polyanthus Narcissus have also been grown with success, notably so the Paper White Narcissus (totus albus); also Grand Primo and Grand Monarque Polyanthus Narcissus.

They can be started any time during September, October or November. The conditions as to results depends as much as anything upon the strength of the bulb. If a good strong bulb is selected, success is almost certain. It is advisable to add some ammonia to the water a few weeks before the plants come into bloom.

Flower Lovers—We Need Your Help

We hope our readers who grow fruit and flowers in an amateur way will be pleased with this issue of "The Canadian Horticulturist." A special attempt has been made to publish articles that will be helpful and interesting to them. We intend to make this department one of the strongest in the paper. Everything of a professional floral nature is to be eliminated, and special attention will be devoted to the needs and desires of the amateur.

Starting with this issue several new departments have been added to the floral section of "The Horticulturist." Mr. W. T. Macoun, horticulturist at the Central Experimental Farm, Ottawa, has kindly consented to contribute a series of illustrated articles on shrubs. Mr. Herman Simmers, of Toronto, the well-known seedsman, will write on bulbs; Mr. Roderick Cameron, of Niagara Falls South, will treat on perennials, and Mr. A. H. Ewing, of Woodstock, on lawns. Each of these gentlemen will be pleased to answer any questions on these subjects that may be asked by our readers.

The interesting article in this issue by Mr. A. Alexander, of Hamilton, is only the first of a series by him that will be published during the spring and summer. These articles will be illustrated as is the one in this issue. Several other prominent amateur florists, including such well-known writers as Mr. J. O. McCulloch, of Hamilton; Mr. A. K. Goodman, of Cayuga; Mr. Edwin Utley, of Toronto; and Mayor H. J. Snelgrove, of Cobourg, have been kind enough to promise to contribute articles on selected subjects during the coming year.

All these gentlemen, although busy men, have consented, through love of their subjects, to contribute these articles free of cost. We feel there are many others among our several thousand readers who have devoted special attention to some one or two branches of flower-growing, who could aid greatly in strengthening this department by forwarding an occasional article with illustrations.

Growing Vegetables for the Early Market*

J. L. Hilborn, Leamington, Ont.

"We start the first tomato plants about March 1, and we like to prick them out often. As soon as they have four leaves on we prick them out again. You can get a better rooted plant by firming the soil; we transplant three times, and often four. We keep them in flats."

MR. MCMEANS:—"You never transplant them into cold frames?"

Answer.—"No, after they get a pretty good size, if they run up too much, we turn them down. We use shallow flats; the majority of our flats are four, and four and a half inches deep, and we only fill them half full the first planting, and after that we use more. The last planting we cut the earth out and take out a chunk of earth with the plant; and we have veneer, cut four inches wide, the length of the tray. One of these strips of veneer is placed in the centre of the tray, and two across, and that leaves a space four inches square, and we plant one in each space, and when we pull the partitions out it leaves the soil ready to lift out with the root. We have that square of earth with the roots all about it, and the plant gets practically no checking. We wet them just before going to field. It they grow stalky it is well to bury them down and bend them over. 'Spark's Earliana' are grown for the majority of the crop."

A MEMBER:—"A great many of them split."

Answer.—"We do not find that with us."

A MEMBER:—"I grow 'Atlantic Prize.' They are not very large but I get early crops and a smooth fruit. They are a little thin-skinned, and will not stand shipping as well as others."

MR. RUSH:—"Do you find that a round tomato is better for shipping than a flat one?"

Answer.—"Yes, I believe it is better and firmer."

A MEMBER:—"Have you grown 'Chalk's Early Jewel?"

Answer.—"Yes, I tried it a few years ago. It is very fine looking, but with us it is two weeks late. The 'Plentiful' is grown in our district to some extent."

MR. ROBINSON:—"They had a great rot in the centre this year. Last year we had no trouble in growing them, but it seems to be the general cry this past season that they were affected with this green rot."

Question.—"Did you ever have any experience with the 'Imperial'?"

Answer.—"Yes, it is a nice sample and it takes well in the market, but it does not pay us as well as the others."

MR. ROBINSON:—"I paid a visit to growers in my district this year, and I was surprised to see the amount of rot in the 'Earliana' and 'Plentiful.' Some ground was very rich, and I do not think you want the ground rich for tomatoes."

Question.—"Do you have any leaf blight among your tomatoes?"

Answer.—"Yes, more or less, but we do not mind it very much, because we think we get the fruit a little earlier."

MR. ROBINSON:—"We grew a few 'Imperial,' and they started with the leaf blight. The crop was very promising, but the leaves seemed to turn black and had the same kind of smell potatoes have when they get the blight."

Answer.—"I think spraying will help that. Some five years ago we were troubled with blight on our tomatoes, and we sprayed with the Bordeaux Mixture as we loaded them on the waggon. We gave them two or three applications after they went to the field, and were able to control it very well. The last three years we have had very little blight. I think it is largely owing to weather conditions."

"I used to grow melons very extensively, both the water melons and the musk melon."

Question.—"What is the particular kind that you grow?"

Answer.—"The improved Hackensack."

Question.—"Do you treat them similar to cucumbers?"

Answer.—"We do not have them so large when we transplant them."

Question.—"Do you plant the melons in furrows?"

Answer.—"We mark out the field in rows and we put the two rows eight feet apart and the next two rows six feet apart."

Question.—"Haven't you found there is a better demand for the small yellow flesh?"

Answer.—"Yes, and if I was growing the melon for the Toronto market I would grow small melons. There is more money in it. We have to spray a good deal, and if we put our rows six feet apart there is no room for our spraying outfit. We put two plants to the hill. We sow some rye when we take off our early melons and early tomatoes."

Question.—"How high do you let your rye get before you plough it down?"

Answer.—"We plough it early in the spring. I have used very little commercial fertilizer, except nitrate of soda, when I am putting out my tomatoes. As soon as we get them in the field, I give them a little treat of nitrate of soda, about a teaspoonful to the plant. It seems to start them growing. We had a striking result from that this year when some large plants were moved out early. The plants that we treated yielded fully one-third more than the others."

Question.—"Have you had any trouble with melon Aphis?"

Answer.—"The history of the melon growing countries, as far as I know, is that they have sandy land and they are effected with melon Aphis. It is a very hard pest to control unless you go about it in the right way. It will cover a five acre field in a week. The female deposits the eggs on limbs and branches of trees in the fall, and those hatch in the spring into females, and they start here and there in the field, and the first progeny are living young, and they give birth to living young in immense numbers. There is just one way to handle them successfully and that is to watch them closely

A Leamington, Ontario, Greenhouse in which Vegetables are Grown for the Early Markets.

*Conclusion of an address on "The Growing of Vegetables for Early Markets," delivered at the convention in November of the Ontario Vegetable Growers' Association. The first part of this address was published in the December issue of THE CANADIAN HORTICULTURIST.

when they begin to run. They start in a few places, perhaps four or five plants to the acre, and this is liable to be near a tree, and if you destroy these plants you will have very little trouble.

"We take a bushel basket of straw and scatter the straw under the plant and set fire to it. We used to try pulling the plants out, and dipping them in coal oil, but in that way we lost an odd insect and concluded that fire is the only sure remedy. This year, in about six acres of melons, we destroyed one-eighth of an acre of plants before we got it checked. A neighbor across the road did not hunt out the hills, and he had to spray heavily and to use a great deal of tobacco stems and the result of his neglect cost him a good many dollars. There is not as much danger from this pest on heavier soil."

The Growing and Marketing of Cauliflower*

A. McMeans, Brantford, Ont.

IN packing cauliflower for market I use barrels and those large American berry crates that hold sixty boxes of berries. Use plenty of paper so that the heads do not rub. You can buy waste paper very cheaply from the newsdealer or newspaper offices. The large size crates cost me fifteen cents each, the small size ten cents each, second hand empty salt barrels fifteen cents and empty sugar barrels twenty cents. The cost of the packing I add to the invoice. Don't be afraid to packing too tight. If you pack too loosely you will find that owing to the jar of transportation they will rub worse than if they are packed tight. Sometimes I have to sit on the lids of the crates to get them fastened. The large crates hold on an average about two dozen heads.

Cut closely and try and have some local place to sell them. If you can't do that then sell them to the pickle manufacturers. Remember that one poor head in a dozen spoils the appearance of the whole lot.

Excessive humidity in the atmosphere frequently develops a disease of the stalk known as stem rot, for which we have no known remedy, but if the weather is cold during August, with occasionally a cool rain to keep them coming along, we may expect to see the care and labor that we have expended on these plants well rewarded. In the open field cauliflower will stand a temperature of 24° or 20° Fahrenheit providing it is not long continued. Full-grown heads are much more liable to be damaged by frost than the small ones.

It often happens that some plants will be left in the field when winter begins to set in. In order to save them and to get the most out of them cut them off at the top of the ground and stick the stump into moist, not wet, sand in a cool cellar, first removing all the leaves except the inner course. By doing this you will be surprised to find how many you can store away in a small space.

Question.—"Do you not think you would have had better cauliflower if you had left some of the outside leaves on?"

Answer.—"No, I do not think so. The more leaves you leave on the more you draw the strength from the stump. I remove every leaf except a few on the inner course because a cauliflower without a leaf does not look nice on the market."

Question.—"With regard to transplanting, do you try ploughing in the morning and setting out the plants in the afternoon?"

Answer.—"It is very seldom I do that. With my cabbage this year and last year I pulled the plants early in the morning, put them in the root-house, and then went to work and manured and ploughed them, and I planted the cauliflower that night and I had a good crop."

MR. T. DELWORTH:—"Watering is quite a labor?"

Answer.—"Yes; and if you plough twice, and keep the land harrowed and cultivated, you will keep the moisture in the ground."

MR. DELWORTH:—"If you plough your ground and put in the plants at once I think it is a good plan. I have adopted that plan and in the last ten years I have not used one can of water in setting out cabbages or cauliflowers."

MR. MCMEANS:—"I have done the same thing; my father brought me up on the idea that the more work you do in doing anything the better the result."

Question.—"Do you ever pull your plants two or three days before planting them, and leave them in a damp place, and let the little rootlets break out before you plant them?"

Answer.—"I have done that with celery, but I could not see much came from it. You start the little fibres and then you brake them off, and you have to start them again under harder circumstances."

MR. J. RUSH:—"I found wonderful results in the hot weather in July. We plant our cauliflower from the fifth to the fifteenth of July, when it is generally hot weather, and I have found that by pulling the plants from the seed-bed and tying them up in bundles and putting them in the cellar on the floor and keeping them there for two or three days, they usually put on a nice bunch of fibres all ready to take over to the soil."

MR. MCMEANS:—"I have no trouble when I put out a patch of cauliflower. I do not think I miss one in a hundred. I am not troubled with the cut worm."

Question.—"What time do you generally plant?"

Answer.—"About June 20. The early cauliflowers bring me more money than the later ones; they may require a little more attention, but I can see but very little difference and if you can get an extra cent on a cauliflower you are making that much more profit. My average net price for the last four years has been $1 a dozen."

Question.—"Is your soil light or heavy?"

Answer.—"Black loam with sandy bottom; it was originally a cedar swamp.

Question.—"You cannot grow early cauliflower there?"

Answer.—"I have put out early cauliflower the same time I put out early cabbage, and they were not bothered with the worm any more than the cabbage were. But your cauliflower will not develop as nice a head as they will later on. If you have a place with a nice cool bottom and of a stiff nature you can produce just as good cauliflower two or three weeks earlier."

MR. RUSH:—"What has been your experience in regard to seed?"

VOICE:—"Sometimes we blame the seedsman for having sold us inferior seed untrue to name. I think it is the time of sowing that makes the difference. I have sown May 1, and May 15, and June 1, out of the same bag of seed and had different results."

MR. MCMEANS:—"That would be due more to the climatic conditions. We do not get the same weather the first of May as we do the first of June."

MR. RUSH:—"They all germinate the same, but we do not produce the heads."

MR. MCMEANS:—"I get my best results from sowing May 1 or May 15. I like to sow the first week in May. Seed sown the first of June will not mature in time."

A MEMBER:—"Can you pick a Snowball from an Erfurt?"

MR. MCMEANS:—"I think the Snowball is flatter. If you buy D. M. Ferry's Snowball you will get the flat top cauliflower. If you buy cauliflower seed this year, and you find it is good I would advise you to go back and buy some for next season."

*The balance of an address on the growing of cauliflower, delivered at the recent convention of the Ontario Vegetable Growers' Association. The first part of this address was published in the December issue of THE HORTICULTURIST.

The Canadian Horticulturist

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The Only Horticultural Magazine in the Dominion

Official Organ of British Columbia, Ontario, Quebec and Prince Edward Island Fruit Growers' Associations and of the Ontario Vegetable Growers' Association

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MAY SUCCESS ATTEND YOU

We wish our readers, one and all, the happiest of happy new years. May injurious insect pests shun you, the sun shine and the rain fall as you desire, and the output of your gardens and orchards for 1906 be the best and greatest in the history of the country. Such good fortune will be none too good for the readers of The Canadian Horticulturist.

THE CANADIAN HORTICULTURIST

The great increase that has taken place in the fruit interests of the Dominion has made it necessary to enlarge The Canadian Horticulturist. During the past two years many improvements have been made in The Horticulturist; new departments have been added and the amount of setting greatly increased. Several issues last year had to be enlarged by the addition of four to twelve pages each, but even this was not sufficient to relieve the pressure on our space, as every month several columns of important reading matter had to be left out.

For years The Horticulturist chiefly represented the fruit growers of Ontario. Last year it was appointed the official organ of the Prince Edward Island, the Quebec and the British Columbia provincial fruit growers' associations and the management was surprised to find how immense are the fruit interests of these provinces. It was soon realized that if The Horticulturist was to keep the fruit growers of the Dominion in touch with the development that is taking place in the fruit interests in the different provinces it would have to obtain regular correspondents in the fruit centres of these provinces and add still another department to the paper. It was found to be impossible to do this last year, but at a meeting of the shareholders of The Horticultural Publishing Company, Limited, held early in December, it was decided to enlarge The Horticulturist to its present form and to make many other improvements. Most of the shareholders of The Horticulturist are prominent fruit growers.

One of the best features of the paper during 1906, therefore, will be the correspondence that will be published in each issue from the leading fruit centres of the Dominion. Regular correspondents have been appointed at Montreal and Winnipeg who will report on the condition of the fruit that reaches and passes through those centres. A monthly letter from Prince Edward Island will appear that will be written by that well-known horticultural enthusiast, Rev. Father A. E. Burke, the president of the Prince Edward Island Fruit Growers' Association. The first of these letters appears in this issue. A correspondent has been secured in Nova Scotia, and one is shortly to be appointed in British Columbia. These correspondents are experts in fruit matters and are located in the heart of the fruit centres. The Horticulturist expects that their monthly letters will have the effect of giving fruit growers generally a broader outlook on fruit conditions throughout the Dominion, and of bringing them into closer touch with each other.

As a means of bringing the paper into closer touch with the rank and file of the fruit and vegetable growers, a travelling representative has been added to the staff in the person of Mr. A. B. Cutting, B.S.A., a graduate of the Guelph Agricultural College, where he took the special course in horticulture, and spent a year as instructor and lecturer in horticulture. Before going to Guelph, Mr. Cutting spent two years on the large fruit and vegetable farm of J. C. Black & Son, at Truro, Nova Scotia. During his connection with the Guelph college he had charge of fruit experiments there, under the direction of Prof. Hutt, and of the co-operative experiments in horticulture over Ontario as conducted by the Experimental Union. Mr. Cutting was in the Argentine Republic for a year and during 1903 visited the southern States, including Maryland and Georgia, in which latter state he spent three months in the great Hale orchards. It will be Mr. Cutting's mission, while representing The Horticulturist, to visit the fruit and vegetable growers in their homes and to contribute special articles to the paper giving their views and his own on topics of general interest. The first of his letters appears in this issue.

Although the number of pages has been decreased from 52, in the old Horticulturist, to 32 in this, its new form, there is just twice as many inches of reading matter on one of these pages as on one of those in the old Horticulturist. This means that The Horticulturist, as published last year, has been enlarged by the addition of twelve pages of reading matter, or practically by twenty-five per cent. In addition to this a better quality of paper will be used this year than ever before.

Since our last issue we have completed arrangements to have the paper printed in Toronto in future, instead of in Hamilton, as formerly. This will be a great convenience to the business management and will make possible the printing of a better paper. Many other improvements have been made in this issue, such as the addition of a poultry department and separate departments with competent men, who have had practical experience, in charge. Those of our readers who have difficulties with shrubs, bulbs, perennials, or those who do not know just how to have a beautiful lawn are advised to send along questions. We will be pleased to secure reliable answers to all questions bearing on horticultural work.

We make no apology for giving these details about the business management and plans of the paper. The horticultural interests of Canada and those of The Canadian Horticulturist are so closely identified that we feel that anything that affects one affects the other, and our readers are interested in both. It is our desire to publish a paper of which Canadian fruit, flower and vegetable growers may have reason to feel proud. The changes that have been made in The Horticulturist have been introduced with that object in view. We look to our readers to give us their active support and it will be our aim to justify their confidence.

THE DISCORD SHOULD CEASE

It is time the fruit growers in the different provinces should get together and, armed with representative exhibits, should settle this matter as to which has the best fruit. Ontario has moved along for years in the happy belief that anything any of the other provinces has been able to do in the line of fruit production must have been largely due to an accident and as such was unworthy of notice. Were any person to inform a Nova Scotian that the Annapolis Valley was not the very best fruit section, well yes, anywhere, something would probably happen. Recently that cheeky little province, Prince Edward Island, has insisted on making itself heard; in fact, it does a little spouting in this issue of The Horticulturist, even going so far as to claim it has produced better fruit than that grown across the channel in the valley of Evangeline. This, of course, they believe, proves it is the best that could be grown anywhere. Quebec has long contended that there are no apples so fine as the Fameuse and McIntosh Red, and that these varieties are grown to perfection within its borders only. Now, if you would believe it, British Columbia persists in flaunting in the faces of her sister provinces the fact that for two years in succession her fruit has captured the gold medal at the big horticultural exhibition in England, the country that is the market of the surplus fruit of all the provinces. She even seems to think that she is so up-to-date in her methods that the other provinces, when they awake from their Rip-Van-Winkle sleep, will have a hard time to catch up to them—the band waggon.

Now what are we going to do about it? This discord among the members of Miss Canada's family should cease. Why not arrange for a national exhibition of fruit next winter, place the best fruit from the different provinces side by side and settle the matter—until the next time? Of course the present situation has its advantages. If I say I have the best fruit you can't prove that such is not the case. At the same time you can continue to believe that yours is the best of all, while the other fellows can laugh at us both. It is annoying, however, to have one's assertions ridiculed and a national exhibition seems the best solution of the difficulty. Now, then, which will be the first province to take the field with a challenge?

OUR GROWERS SHOULD ACT

Ontario farmers and fruit growers as well as those in the other provinces, lose scores of thousands of dollars every year through the careless and wasteful manner in which a large proportion of the apple crop is gathered and marketed. Improvement is needed all along the line, including the method of growing the fruit, the picking, packing and selling of it on this side of the Atlantic and in the marketing in Europe. The existing system is like a sieve being so full of weaknesses, through which the money of the growers slips, that it is a wonder they receive as much as they do for their fruit.

The main defect is the number of times the crop is handled between the day it leaves the orchards of the growers, and when it reaches the hands of the consumers. In many cases the grower sells the fruit to a packer who sends men to the orchard to do the picking and packing. It is forwarded by the buyer to large dealers in Great Britain who call in auctioneers. The auctioneers dispose of the fruit to retailers and wholesalers, who in turn sell it to the consumers. It not infrequently happens that a crop passes through the hands of five people between the time the grower sells it and the consumer buys it from the retailer. Each of the intermediaries demand their fee, with the result that it is not to be wondered at that the grower frequently does not receive a quarter or a fifth of the price the fruit finally sells for in Europe. The remedy for the situation lies in greater co-operation on the part of the growers. Co-operation will make it possible for the growers to sell direct to the retailers and thus save

at least one half of the charges now exacted by the middlemen. These matters are discussed at length in this issue. It is well they are, because they represent the greatest problems confronting our fruit growers.

" Evidence of the value of THE CANADIAN HORTICULTURIST as an advertising medium continues to accumulate rapidly. The cash prize of five dollars offered in the November issue to the reader purchasing goods to the greatest value from advertisers in that issue was won by Mr. W. C. Dempsey, of Albury, who bought trees worth $140 from the Belleville Nurseries. A similar prize, as well as smaller ones, is offered in this issue. Readers must tell the advertisers that they saw their advertisements in THE CANADIAN HORTICULTURIST.

THE CANADIAN HORTICULTURIST starts this year with the largest circulation and the most valuable advertising patronage in its history. The advertisements carried in this issue are worth three times those that appeared in the January issue of 1905. Our February number will be devoted largely to planting and nursery matters, and the March issue to spraying. Advertisers should bear this in mind and should apply early for choice of positions.

Canadian Fruit in Poor Condition

Mr. W. A. McKinnon, Canadian commercial agent at Bristol, England, has the following to say regarding the condition of Canadian fruit when it reaches Great Britain:

"I have examined a lot of Canadian apples recently landed for sale on commission. These consisted of a number of varieties, including King, Greening, Pewaukee, Cranberry Pippin, Hubbardston and others. The receiver stated that the fruit was not in good condition, and he therefore offered facilities for its examination. Not one barrel of the 20 or more that I examined was 'tight,' as all should be on arrival. It seems hardly possible that these could have been properly packed at the point of shipment; if so, the fruit must have been subjected to high temperature at some stage of the journey, for there was a large proportion of rotting and soft fruit. As the inspector for the department of agriculture stated that they were carried in a well-ventilated part of the ship (No. 1 'tween decks'), it is hardly to be supposed that the damage began on board ship, and I am inclined to fear that the fruit was never properly cooled before it went aboard at Montreal. The shipper has been notified, but it is to be hoped that other exporters will take warning. Especially in a season when good fruit is commanding such excellent prices, it is very regrettable that profitable returns should be lost owing to the want of protection from heat between the time of packing and loading on board ship.

TOO MANY VARIETIES

"It is impossible for shippers to throw away all the less popular varieties and to confine their shipments to a few of the leaders; so long as the trees live, or until they can be top-grafted, these grades must be marketed, but odd varieties and mixed lots would do better in the larger and more highly organized markets on this side. The Bristol market is just in process of development, and should have special care. The trade here express the opinion that five or six varieties are all that they require, and have recommended some of the following: Spy, Baldwin, Greening, King and Golden Russet. The Snow is very popular in the early part of the season if it can be landed in good condition.

A SUCCESSFUL SHIPMENT

"An Oakville exporter has just sent a very good lot, showing less than 10 per cent. of 'slacks,' the private sale of which, so far as it has gone, has yielded excellent prices. This lot included some King, Spy, Greening, Mann and Colvert, and was not of the highest quality, many of the barrels being marked No. 2 (or XX), but the prices realized are much better than could be got for so-called No. 1 grade if improperly packed or out of condition."

Canadian Apples in France

A report from Commercial Agent Poindron, of Paris, France, gives some valuable hints as to how Canadian apples should be sent there. The report says:

"Fall and winter table apples are the only ones suitable for the French market, and especially Golden Russets, Baldwins, Ben Davis and Spies. It would not pay Canadian exporters of apples to send to France on consignment for sale XX barrelled or boxed apples. XXX apples only will pay, and c.i.f. Havre dealings would be the most satisfactory basis rather than consignments for sale.

"Barrelled apples are in greatest demand. Much care should be taken in shipping the regular Canadian apple only as to weight and size. Apples in France are sold by the 100 kgr. as a unit (220 lbs.), and not by the barrel. Two years ago the Canadian apple barrel was introduced on the French markets, for the first time, in substantial quantities, weighing 74 to 75 kilos (163 lbs.) gross weight, and 68 to 70 kilos (152 lbs.) net weight of fruit per barrel. Later in the season barrels of smaller size were shipped to Paris market, causing trouble and loss to Paris importers who had bought by the barrel and sold by weight. Great care should be taken in having the barrels nailed, as in many instances the point of the nail is not properly knocked down, and it pierces and rots the apples. As a consequence, the apples in the barrel become loose and are badly bruised when the barrel is open, which constitutes a great damage to the exporter and to the reputation of the Canadian apple itself on the market.

"As to boxed apples, no fruit below 7 to 8 ounces in weight should be shipped to France. On the contrary, extra choice Golden Russets and Baldwins and Spies, 7 to 8 ounces and over, carefully packed tight in paper and paper wool would meet a good paying demand. By paper wool I mean light paper in small ribbons. The French fruit packers and dealers object to 'excelsior' wood fibre which, they say, settles owing to handlings during transportation and makes a much less compact package than paper wool, which enjoys the preference of all of them. The fruit remains unbruised and only in such condition can the full price be obtained from retailer and consumer."

To Publish Results of Experiments

At a meeting of the board of control of the Ontario Fruit Experiment Stations, held during December, in the Parliament Buildings, Toronto, it was decided to have published the results of experiments conducted during the past 10 years. This report will include the numerous experiments that have been carried on with different varieties of the various fruits in each of the experiment stations.

The object in having such a report published is to show the growers or prospective growers what varieties are best adapted to the different sections of the province.

In the same volume will be included the work of the experimenters in obtaining accurate descriptions of the standard varieties already planted throughout the province. This part will be fully illustrated, and will be of special service in identifying the different varieties.

The board of control comprises Messrs. G. C. Creelman, chairman; Linus Woolverton, of Grimsby, secretary; W. T. Macoun, of Ottawa; Prof. H. L. Hutt, of Guelph; P. W. Hodgetts, of Toronto; Elmer Lick, of Oshawa; and A. M. Smith, of St. Catharines.

The Standard Fruit Baskets

The fruit growers of the Niagara district have agreed that the law regarding baskets should be amended. At a meeting in St. Catharines on November 25, the points for and against were freely discussed by the leading growers who deal most extensively with basket fruit. The prevailing opinion was that standard baskets should be adopted. It was decided by a large majority to have only the present 15 quart basket for wine grape purposes, the 11 quart basket, a 6 quart basket and the present pony baskets of 2 2-5 quarts.

A committee was appointed to investigate the various measurements and decide on which shape would be best adapted to general use. Top and bottom measurements had to be selected for the 11 quart and the 6 quart sizes. This committee met on December 2 and reported that they had decided the law should be amended to read: "11 quart basket 5¾ inches deep, bottom to be 6¾ x 16¾ inches, and top 8 x 18¾ inches, measurements to be inside of the veneer and not to include the top band, the cover to be 8½ inches wide by 19 inches long.

"6 quart basket 4⅝ inches deep, with bottom 5⅝ x 13½ inches, and top 7 x 15⅛ inches, inside measurements, cover to be 7¼ x 15½ inches, corners of baskets to be nicely rounded."

A few of the growers were in favor of having a third size for peaches, plums and cherries. Some wanted 7 quart, some 8 and some 9 quarts, but the majority were in favor of having only the standards as defined, and leaving the law as at present, so that if any grower has a special market he can use a 7, 8 or 9 quart basket by stamping the size in large letters on the side of the basket—this to be done by manufacturer. Very few of these special baskets are used. Another objection raised to the special sizes was the fact that it is felt that the time is not far distant when standard fruit crates like those used by western growers will be adopted for the better grades of fruit.

The fact that almost all of the baskets used for grape shipments are of the 6 quart size, largely determined the action of the growers. A larger basket than the 6 quart or 9 pounds is not desirable for shipping grapes any distance, and it is the size most called for by the buyers. Only three factories in Ontario are making the 6¾ quart baskets.

British Columbia Growers on Top

The fruit sent by British Columbia to the Royal Horticultural Society's show in London, England, captured the gold medal this year for the second time. When it is considered that this has been done in competition with fruit from all the colonies, some idea can be gained as to the high quality of the display sent from British Columbia.

The display of apples covered an area 75 x 6 feet, and Britishers said it was the finest exhibit they had ever seen. Besides a gold medal for the provincial exhibit, eight industrial exhibitors' medals of lesser value were awarded to British Columbia growers.

A Fine Spraying Machine.—Regarding the "Duplex" Wallace Power Sprayer, Capt. H. L. Roberts, of Grimsby, reports that it has worked well and given him no trouble. He finds only one pump sufficient for grapes and similar work. This machine, he says, has always maintained plenty of pressure. His apple trees are very large.

Scalecide is being widely used across the line for San Jose Scale, and reports show that the results have proved satisfactory. In an address on spraying at the Fruit Growers' Convention in Toronto, Mr. W. N. Brown, of Wyoming, Del., said that it was perfectly soluble and costs no more than the Lime-Sulphur wash. It is one of the cheapest of the combination washes used in spraying.

Fruit Growers Meet in Annual Convention

THE importance of the fruit industry in the Province of Nova Scotia was well shown by the interest manifested in the 42nd annual convention of the Nova Scotia Fruit Growers' Association, held at Annapolis Royal, on December 13, 14 and 15. The subjects for discussion had been selected owing to their importance and this fact added to the interest taken in the sessions. The election of officers resulted as follows:—President, Mr. John Donaldson, of Port Williams; first vice-pres., Mr. G. C. Miller, of Middleton; secy., Mr. S. C. Parker, of Berwick; asst. secy., Mr. J. H. Cox, of Cambridge; executive, Messrs. R. S. Eaton, of Kentville; A. C. Starr, of Starr's Point, and Col. S. Spurr, of Wilmot.

PRESIDENT'S ADDRESS

The address of the president, Mr. Ralph S. Eaton, of Kentville, dealt fully with the past year's crop returns and the prospects of the fruit growers of the province. "Though a million dollars which we have received so often for our apples," reported Mr. Eaton, "will probably come again to the fruit growers this year, yet the crop of fruit, for a second season in succession, has been a disappointing one to many. Yet, if we study our conditions carefully, we will find much in them to encourage us. The average returns of about $3 per barrel, for good fruit under the heavy shipments that have gone forward from this continent to England, means much to the stability of that market.

Again, never before have so many persons felt satisfied with their ability to thoroughly control our worst enemy, the black spot. Never before, perhaps, has there been such marked evidence of the efficacy of Bordeaux when applied early and thoroughly. The feeling of certainty regarding this question will bring about a more general application of the fungicide. We are not likely to have again for many years such unfavorable weather when the pollen of the apple blossoms is in its most sensitive condition. Then again our trees have had a rest that should count in the income of 1906. The ocean transportation question that was so serious for many years seems free from criticism. The competition and difficulties in almost every line of business are increasing yearly, and we cannot expect ours to be an exception. More study is necessary to enable us to fight our enemies, and only the fighter really knows the solid satisfaction of overcoming obstacles and standing up against disappointments. After all men who really accomplish much are not men of chance and broadcloth, of legacy and laziness.

300,000 BARRELS FOR EXPORT

"It is doubtful if our export of apples this year reaches 300,000 barrels. Already 175,000 barrels have been shipped from Halifax, but for this year more than half the crop is gone. The County of Lunenburg rather surprises us with an estimated yield of 10,000 barrels. The Japan plums that blossomed early and set their fruit before that destructive week in June, were a good crop. Cherries were almost a failure. Pears were good. Peaches were fair.

"The resolution of our executive asking the Government to place the Express rates under the control of the Railway Commission, as freight rates now are, was formally presented to the Minister of Railways. This seemingly reasonable request was backed up also by Quebec and Ontario. It has not yet been acceded to. These questions are always larger than they appear to be at a distance. Further study and pressure will be necessary. I trust that the Dominion Convention will clinch this question. With two and three lines of railway in this small province carrying our expressed fruit to its destination, and each charging a separate high mileage rate the cost of perishable fruit transportation with us is very excessive.

ORCHARD MEETINGS

"Under the auspices of this association several successful orchard meetings were held during the year, when spraying by engine power or by hand was illustrated and practical orchard topics were discussed. Prof. Sears, our venerable pomologist; Mr. R. W. Starr and our secretary, Mr. Parker, assisted in making the meetings profitable.

"I wonder if we appreciate what was done for our province at Halifax when our association was organized in '63, and if we are familiar with the names of those to whom the credit of its inception is due. We should not forget the names of those first officers, among whom were Robert Grant Haliburton, the first president; Dr. C. C. Hamilton, the second president, and perhaps the prime factor in the movement; Dr. Robertson, as well as Dr. Forester, Richard Starr, Avard Longley. Herbert Harris, John Brown, Leander Rand, Edward Bishop and D. Henry Starr."

Prof. F. C. Sears, of the Agricultural College, Truro, gave an address on "Practical Pruning," with demonstrations on nursery stock and also on branches from bearing trees. This was interesting and instructive and brought out much discussion. Many questions were asked on the various points introduced.

"Nursery Growing" was discussed by Mr. Arthur Harris, of Annapolis Royal, who gave details of his process of preparing the soil, fertilizing, planting, budding, pruning and cultivating.

At the evening session of the first day, the best feature was an address on "Soil Management of Orchards, and its relation to Winter Killing and other Injuries by Frost," illustrated by lantern slides given by Prof. Sears, of Truro. Many questions were asked and much discussion on the various points developed.

On the second day the subject "Co-operative Fruit Shipping" was introduced by Mr. J. H. Tupper, of Round Hill. This subject caused a lively discussion on the different points advocated. The general opinion expressed was that it was a good scheme if properly conducted, but that farmers were not educated up to the point of making it a safe venture, and that it needed much missionary work and personal canvass to make it a success.

"What Varieties of Apples shall we plant?" was dealt with by Mr. R. W. Starr, who claimed that the list of standard varieties is large enough to select from and who advised growers to be careful in selecting new sorts and to notice the varieties that do best in each locality and choose accordingly. Market qualities must not be overlooked. The speaker gave a list of those best suited for light sandy loams, and of those not suited for clay soils, because they do not color or mature sufficiently in such locations.

Mr. W. T. Macoun, of the C. E. F., Ottawa, followed with an address on "Orchard Culture and Practice." He recommended the earliest possible cultivation in the spring and continuous stirring of the surface soil up to the first or middle of July, to conserve moisture and liberate plant food. Cover crops should then be sown to furnish nitrogen and humus, to check wood growth, develop fruit buds, and to prepare the tree with well-ripened wood for the frosts of winter. He remarked that the list of standard apples for Nova Scotia was much the same as that for Ontario.

Mr. R. W. Starr followed, advocating plowing the orchard in the fall just after the leaves have fallen, applying the necessary fertilizers and harrowing to a fine tilth. It was claimed that it would destroy the germs of "black spot" on the leaves, turn the cover crop into plant food fitted for the earliest growth in the spring, and furnish a better frost protection to the roots than can be obtained by any other practical means.

POWER SPRAYING

Mr. W. M. Black, of Wolfville, gave an excellent paper on "Power Spraying." His machine was described as a tri-cylinder pump having a one and a half horse power gasoline engine, with a long half-round tank mounted on low wide-tired wheels. The agitator was found to be unsatisfactory, and he affixed a short hose from the pump to the bottom of the tank. That only agitated the centre and the insoluble material settled at each end. He then discarded the tank for a 100 gallon cask and found that the hose from the pump kept the whole contents violently agitated. He had used two lines of hose and extension rods with clusters of eight nozzles on each, but would not do so again, as a man could not move around quickly enough to avoid waste of mixture. Next year he would use three lines with four nozzles on each, one working from a platform, the others on the ground. No trouble was experienced maintaining a pressure of 90 pounds and upwards.

Mr. G. H. Vroom, fruit inspector, of Middleton, followed, endorsing much of what had been said and giving his experience with the Government power sprayer. It is a large and heavy machine, that is probably too cumbersome for practical use in orchards, where the land is not always level. Its work was very satisfactory, and far ahead of hand pumps.

In a paper on "Cranberry Culture," Mr. J. S. Bishop, of Auburn, reviewed the commencement and growth of the industry and gave statistics of crop and price, methods of culture and harvesting, preparation for market, protection from frost and insects, best varieties to grow, etc. He claimed that the day was past when it was thought that the best berries grew on the poorest soils. It is known that cranberries need feeding as well as other fruits, and that fine bone and potash greatly increase the crop.

Mr. W. T. Macoun, of Ottawa, followed with an address on "Potato Culture," giving results of experiments with many varieties, which showed a vast difference in yield. Lists of the best, and results of experiments with change of seed, and with different methods of cultivation were given.

STANDARD BARRELS

"The Standard Barrel" question was brought up by Mr. S. C. Parker. He reviewed the legislation on the subject, and showed that while the law admitted as a legal size the barrel of 96 quarts, or three bushels, for fruit and vegetables, it did not confirm it to that size. In some places the barrel was made to hold 112 quarts or 3½ bushels. What is wanted is that a standard of measurement be adopted throughout the Dominion. After some discussion a resolution was passed unanimously requesting the legislature to pass an Act defining the size of the dry barrel for fruit and vegetables, and that the dimensions be plainly stated for inside measurement. Also that fruit inspectors be empowered to inspect all barrels, boxes and packages as well as contents, to see that they comply with the conditions stipulated by law, and that coopers shall mark their name and address on barrels as a guarantee the requirements have been filled.

Fruit Inspector Fitch, of Clarence, gave a paper on the working of the Fruit Marks Act. He claimed that improvement has been made in the selection and packing of fruit. Dishonest packers are comparatively few in number, in spite of the noise made about them. The most trouble comes from the barrels marked No. 2, or XX, as there is no legal definition to say what constitutes a No. 2 apple. It should be defined as well as No. 1. No. 3 should be done away with, as this grade is meaningless and confusing. It should not be put on the market at all, but should be manufactured or fed to stock.

Inspector Vroom followed, reviewing the work the inspectors have done, and are doing. He stated an advance has been made all along the line, but that much has yet to be done to improve both packing and barrels. Sometimes barrels are smaller than the law allows, but the inspectors can only call attention to the fact, as under the Act they have no power to condemn such barrels. Some of the papers read at the convention will be published in THE HORTICULTURIST.

The Prince Edward Island Convention

THE fruit growers of Prince Edward Island were in session at Charlottetown Dec. 19 and 20, and, as usual, their meetings were most interesting, instructive and purposeful. Indeed, the remark of Senator Ferguson might be literally accepted when he said that of the many important meetings of the association, he believed this was really the most useful.

The association is in a most flourishing condition. The treasurer's report showed a considerable balance on the right side of the ledger. Reports on transportation, co-operation, prize lists, etc., showed how well organized the island is in those important matters.

Besides the local orchardists, Mr. W. T. Macoun, horticulturist at the Experimental Farm, of Ottawa; and Prof. F. C. Sears, of Truro Agricultural College, were present and rendered valuable service.

The National Council subjects coming up for discussion monopolized to some extent the program, but there were some excellent formal papers and addresses delivered, such as Senator Ferguson's paper on the "Commercial Outlook," which elicited much appreciation; Registrar White's "Horticultural Excursions;"

Rev. Father A. E. Burke

President Prince Edward Island Fruit Growers' Association and Special Correspondent from the Island for THE CANADIAN HORTICULTURIST.

Prof. Jones' "Horticultural Beginnings;" Mr. Dickey's "Cranberry Conditions in 1904-5," and the excellent addresses of Mr. Macoun on "Island Horticultural Notions," and "Remarks on Varieties" and Prof. Sears' "Provincial Demonstration" and "First Impressions of Island Horticulture."

At a large public meeting with a musical program interspersed, His Worship Mayor Kelly and His Honor Lieut.-Governor McKinnon made salutatory addresses, and Acting Premier Hazzard, Commissioner of Agriculture Reid, Senator Ferguson and Alex. Martin, M.P., made addresses commendatory of the industry and encouraging its extension in healthy lines.

The president, Rev. Father Burke, made his annual address at this meeting, and as usual it was replete with matter and admirable in manner. He again insisted on better fertilizing—it wasn't enough to know that good fruit of every variety could be grown on the island; the best had to be produced, and as with all other organisms proper nourishment was an important condition of success. He wanted co-operation also, and expected the Federal authorities to assist in organizing for it as they did with the cheese industry. A packing, grading, marketing house at the capital was suggested, also a means of canning, jamming and evaporating fruit. Father Burke spoke of the forthcoming National Council, from which he expects much. He also declared flatfootedly for an independent fruit commissionership at Ottawa.

The discussion arising from the question box was never more vigorous or interesting. The number of questions was very large, and covered the whole range of practical horticulture. The questions were answered most satisfactorily by the visiting professors, and local information was available for purely local queries.

The fruit show in connection with the convention was most successful. The beautiful apples on plates on the tables, and the barrels and boxes were much admired. Profs. Macoun and Sears did the judging, which was in every way satisfactory. We append Mr. Macoun's appreciation of this department.

The election of officers resulted in the unanimous and enthusiastic rechairing of the Rev. Father Burke in the president's place; the election of D. J. Stewart as vice-president, and the return with few exceptions of the old board. Father Burke made his acknowledgments, and declared that as he had now put in his conscription, surely next year he would be permitted to retire. The resolutions passed covered a wide range of work, many of them referring to National Council subjects.

The Fruit Exhibit

W. T. Macoun

While the fruit exhibit was not quite as large as last year, it was a very creditable one considering the light crop that followed the large one of 1904, and the fact that the heavy snowfall of last winter did great damage to fruit trees throughout the island. The fruit growers, however, are not discouraged, and are perfectly confident of their ability to grow good fruit. Last year, as well as this, certain varieties of apples appeared much better suited to the island conditions than others. Everyone was struck with the particularly fine lot of Kings that were shown, there being a very close competition in this variety, the specimens comparing very favorably with any seen in other provinces. The same may be said of the Stark apple, which succeeds admirably on this island, a box of this variety being as fine as any we have ever seen. There was also a very fine display of Gravensteins. The Annapolis Valley will have to look to her laurels if she wishes to hold the palm in the Maritime Provinces in regard to this variety. In the competition in boxes the first prize went to a box of Gravensteins that was practically perfect, both in regard to the fruit shown and in method of packing. Other varieties which were well grown were Wealthy, Alexander, Bellflower, Ben Davis, Baxter, Ontario, Wolf River and Wagener.

While the competition in boxes was not large, the fruit shown was all fine and the packing very good. Indeed, little improvement was possible in fruit, package or method of packing, and the prize boxes were practically perfect in every respect. From the writer's observations made at the exhibitions held in connection with the Fruit Growers' Association for the past few years, the varieties that in our judgment would be most desirable to plant are:

As permanent trees—Gravenstein, Alexander or Wolf River, Ribston, Blenheim, King, Spy, Stark, and a few Baxter for trial.

As Fillers—Wealthy, Wagener, Ben Davis, and a few Ontario for trial.

These observations are made from the fruit only. If made in the orchards there might be a slight change, but probably not much.

In closing I wish to compliment the fruit growers, including the energetic president, Rev. Father Burke, on the display of fruit made. It was easy for even an outsider to see that it was largely through the indefatigable efforts of the latter that much of the success of the exhibit, and in fact the whole convention, was due; but the mere fact that such a good exhibit was made in an off year, showed that the Fruit Growers of P.E.I. do not lack enthusiasm and are willing to work together to further the fruit industry on Prince Edward Island.

St. Catharines Notes

Robert Thompson, St. Catharines

During the past month the weather has been propitious for the fruit grower, allowing him to finish up his ploughing and ditching. Never was the work as well advanced, and a lot of pruning has been done. All this should tell in the fruit growers' favor in the spring. The Niagara peninsula fruit growers held a meeting in St. Catharines on Saturday, Dec. 16, to discuss the tariff question. A large number were present. After a long and exhaustive discussion the meeting decided in favor of a resolution as follows: "That inasmuch as the fruit growers of Ontario in convention assembled at their annual meeting held in Toronto during the month of November, 1905, passed a resolution unanimously asking that the duties on fruit remain as at present, except as in regards pears and plums, which were asked to be changed from an ad valorem to a specific duty of ½ cent a pound, and a committee met the commissioners and pressed these views, we feel that it would be wisdom on our part to reaffirm our approval of that action." A few growers were in favor of asking that the duty on peaches be raised to two cents a pound, and pears and plums to one cent a pound and apples to 75 cents a barrel, but the consensus of opinion seemed to be in favor of being moderate, and they felt that the present duty was sufficiently protective for all ordinary purposes, and would not bear unjustly on the consuming public.

The Grimsby and Winona growers wished the depth of the 6 quart baskets as defined at a previous meeting, changed from 4⅝ inches in depth to 4½ inches, and the St. Catharines growers agreed. This will have the effect of making the growers unanimous in favor of the 6 quart size.

Apples in this district are almost as scarce as oranges. The canning factories are trying to procure contracts from tomato growers at outlying stations such as Fonthill, Jordan and others, agreeing to furnish crates, make up carloads and pay freight to St. Catharines, and pay 25 cents a bushel. A large number of the growers refuse to grow for 25 cents, as at this price nearly any other crop will pay better, and the factories can afford to pay 30 cents as their output for 1905 is nearly all sold, and they start in the new year as short of canned tomatoes as at the end of 1904.

Spraying for Scale

The eighteenth annual report of the Maryland Agricultural Experiment Station, College Park, Maryland, contains a report of tests made of spraying materials for controlling the San Jose scale. The tests made by Mr. Thomas B. Symons, who says it has been proven that by proper spraying the San Jose scale can be kept under control, and that the trees can be saved and made to produce profitable crops

Tests were made of the various spraying solutions used at different seasons. Better results were obtained from the cooked solutions of lime sulphur and salt than with the uncooked. The addition of caustic soda or potash was an advantage when cooking was not practised. It was found that the lime sulphur and salt spray may be used to advantage in late fall or early winter, but that the preferable time is early spring.

Ontario Vegetable Growers are Wide Awake

THE Ontario Vegetable Growers' Association is rapidly becoming one of the strongest associations of the kind in the province. The annual meetings of the branch associations were held during December and in most cases were well attended and successful. According to the constitution of the Ontario association, the annual meetings of the branch associations have to be held during December, at which time the officers are elected. The branch associations have the right to appoint a director to act on the board of the provincial association, and these directors form the Provincial board.

The membership fee of the branch associations is $1 a year, and they pay 50 cents per member to the Provincial association, which makes the members of the branch associations members of the larger body, entitles them to receive free copies of the official organ of the association, free copies of the report of the Ontario vegetable growers' convention, and other printed matter.

The report of the secretary of the provincial association, Mr. H. B. Cowan, as read at the meetings of the branch associations, showed that the provincial association on December 1 had a balance on hand of $500, the paid up membership of the association being 225. Branch associations are located at Toronto, Hamilton, Sarnia, Chatham, Leamington and St. Catharines, with individual members scattered all over the province. The branch associations were asked to consider several important matters at their annual meetings, and report their decisions through their directors at the first meeting of the provincial board. These subjects included the advisability of the provincial association devoting a portion of its funds to the securing of regular crop reports throughout the growing season for the benefit of the members of the association; the advisability of giving the directors the right to amend the constitution of the Ontario association so that an executive committee can be appointed, and the advisability of petitioning the Dominion Government to appoint an appraiser of vegetables whose duty it would be to inspect importations of vegetables into Ontario, to see that they were not entered at too low a valuation. The reports on these subjects received from the branch associations have shown them to be in favor of action being taken along all three lines. The following are reports of the meetings of several of the associations:—

Toronto Vegetable Growers

At the annual meeting of the Toronto branch of the Ontario Vegetable Growers' Association officers were elected for the ensuing year, and it was decided to hold monthly meetings during the winter months. Great satisfaction was expressed with the recently formed Ontario Vegetable Growers' Association, and every member of the 30 or more who were present was anxious to do what he could to further the interests of the larger association as well as of the Toronto branch. It was thought that the constitution should be revised so that the provincial association could select a suitable executive committee to deal with matters not of sufficient importance to warrant the expense of calling together the whole board of directors. It was also carried unanimously that the Toronto branch was in favor of a reasonable sum being expended by the Ontario Association in securing crop reports, and recommended that this information be obtained in whatever way the directors deemed best. Another point that created much discussion was the appointment of an official to appraise the value of vegetables imported into Ontario. It was agreed that such an official should be appointed and given power to prevent the importation of vegetables invoiced at less than their real value The proposal to ask the Ontario Government to carry on experiments to devise remedies for insects and fungous diseases was also approved and Messrs. Delworth and Rush were appointed to draft a statement of the main points that they considered to be most worthy of special attention.

The election of officers resulted as follows: pres., Geo. Syme; vice-pres., R. Lankin. The offices of secretary and treasurer were combined and Mr. F. F. Reeves was selected secretary-treasurer. The executive committee consists of Messrs. Syme, Lankin, Reeves, Thos. Delworth, J. W. Rush, W. G. Carter and John McKay. Messrs. Wm. Harris and W. G. Carter were appointed auditors. The directors for the board of directors on the provincial association are Messrs. Reeves, Lankin, Rush, Syme and Delworth.

Each member was requested to canvass his section for new members, and the officers were appointed to do special work in this line.

Mr. Delworth, of Weston, suggested that monthly meetings be held during the winter months, so that the growers could exchange ideas. It was decided, therefore, to hold the first of these monthly meetings on the first Saturday in January at the Albion hotel at 3 o'clock. The executive committee was appointed to arrange for the discussion.

Messrs. Syme, Reeves, M. Hamilton, John McKay and W. Elford were appointed to arrange for the annual banquet in January.

Sarnia Growers and the Tariff

The Sarnia branch held its annual meeting December 14, on which occasion considerable enthusiasm was shown, both in the work of the local association, as well as in the work of the provincial organization. The election of officers resulted in Mr. J. Baxter being appointed president; Mr. William Gallie, vice-president; Mr. John Atkin, secretary and director on the board of the provincial association.

A lively discussion took place in regard to the matters referred to in the report of the secretary of the provincial organization and a committee was appointed to draft a resolution embodying the views of the members of the branch. The meeting considered each suggestion separately and adopted them all. The question of the tariff on vegetables was considered at length, and a committee was appointed to draft a resolution to be presented to the local member of the House of Commons, with a request that he use his influence on behalf of the vegetable growers. The members decided to recommend to the other branches throughout the province, that they should speak to their members and ask for their influence in the same direction.

Chatham Branch.—The members of the Chatham branch of the provincial association elected the following officers at their annual meeting:—Pres., Richard Everitt; vice-pres., H. Hudson; sec.-treas., F. Collins; directors, James Green, R. A. Tompkins, John Colby, Wm. Abbs, and Charles Ross.

St. Catharines Growers.—The St. Catharines growers have completed the formation of a branch at that point. Mr. Robert Thompson is president and Mr. W. C. McCalla, secretary.

The Toronto branch of the Vegetable Growers' Association will hold their annual banquet at Webb's on January 24. The following program has been arranged for the first of the monthly meetings that is to be held at the Albion Hotel on Saturday, January 6, at 3 o'clock:—Cauliflower Growing, by J. McKay; The Best Way to Market our Produce, by Geo. Syme, jr.; Forcing Vegetables under Glass, by J. Westwood, and Bunching for Profit, by R. Lankin.

Hamilton Growers Organize

The Hamilton branch of the Ontario Vegetable Growers' Association held its annual meeting December 21. Unfavorable weather prevented the majority of members from attending, but those present transacted considerable important business. The auditor's report showed a large cash surplus on hand. Many members spoke highly of the work now being done by THE CANADIAN HORTICULTURIST to further the interests of the Ontario Vegetable Growers' Association.

The following officers were elected for the coming year: pres., W. A. Emory, of Aldershot; vice-pres., R. H. Lewis, of Hamilton; sec.-treas., Jas. A. Stevens, of Hamilton; auditors, B. Burniston, of Aldershot; Frank Crosthwaite, of Bartonville; director on executive of the Ontario Vegetable Growers' Association, R. H. Lewis.

Fruit Growers' Organizations

The Ontario fruit growers decided, at their recent convention, that local associations or horticultural societies organized in any locality may become affiliated with the Ontario Fruit Growers' Association by paying in advance the sum of one dollar for each member. This fee is to be paid to the local secretary-treasurer, who is to forward 75 cents per member to the secretary of the provincial association. This entitles the members of local associations to all privileges of the parent organization.

In the discussion relating to the clause of the constitution referring to affiliated societies, several members claimed that only 50 cents should be forwarded to the provincial secretary, but it was objected that, as 60 cents per member had to be transferred to The Horticultural Publishing Company for THE HORTICULTURIST, local organizations, by paying 50 cents to the parent association, would be getting that magazine for 10 cents less than the actual cost and the Ontario association would be out that much for each member secured through the local organizations.

The point was referred to a committee and finally settled that 75 cents be paid. In return it is expected that the local associations shall send one delegate for each 50 or more members to the annual convention and that the expenses of that delegate shall be borne by the parent organization.

A Fine Steamship Service

Fruit growers who export their fruit, are finding that the Allan Line Royal Mail Steamers are specially adapted for the carriage of imported fruits, the ships being well fitted with modern stowage, in addition to being fast and absolutely regular. Consignees would do well to give this matter careful consideration. It frequently happens about the Christmas season, that fruit is not delivered as promptly as the occasion requires.

The Allan Line Royal Mail Steamer "Tunisian" left Moville at 1 p.m., Dec. 1st, for Halifax, and delivered her Christmas fruit at Montreal on Monday, Dec. 11th. Consignees in Ontario might compare this service with arrivals via other routes and find it in their interests to do so.

Fitzsimmons, Derry & Co., fruit dealers of Duluth, have a branch office at Sault Ste. Marie, Ontario. This firm is strongly in favor of the Canadian Fruit Marks Act Situated as they are in American territory, where there is no Fruit Marks Act, as well as on Canadian territory, they are in a particularly favorable position to judge the merits of this piece of legislation.

Mr. W. Carter, Canadian Cargo Inspector at Liverpool, thus describes the British Columbia fruit that took the gold medal at the Royal Horticultural Show: "The quality of this fruit was most excellent. I have never seen finer apples anywhere; this was the opinion of all who saw them."

Quebec Fruit Growers Meet in Convention

LEADING fruit growers in the province of Quebec rallied at Richmond on December 13, 14, on the occasion of the annual winter meeting of the Pomological and Fruit Growing Society of the province. The sessions were well attended and subjects of live interest to fruit growers were dealt with. For this reason the convention was an important one. The following officers were elected:—Patrons, Hon. S. A. Fisher and Hon. A. Tessier. Hon. pres., W. W. Dunlop, Outremont; Hon. vice-pres., J. M. Fisk, Abbotsford; pres., R. W. Shepherd, of Como; vice-pres., J. C. Chapais, of St. Denis; sec.-treas., Dr. H. W. Wood, of St. John's; Directors of districts—District No. 1, G. B. Edwards, of Covey Hill; No. 2, Charles A. Fisk, of Abbotsford; No. 3, J. H. Carter, of Massawippi; No. 4, Mr. Auguste Dupuis, of Village des Aulnais; No. 5, Henri Dumas, of Murray Bay; No. 6, C. P. Newman, of Lachine Locks; No. 7, G. Reynaud, of La Trappe; No. 8, N. E. Jack, of Chateauguay Basin; No. 10, Robert Brodie, of Westmount.

"Commercial Fruit Growing," was discussed by Mr. C. P. Newman, of Lachine Locks, who described conditions that would benefit the export trade. The recent development of apple growing in Quebec has made it necessary to look to foreign markets. It was recommended that apple growing be specialized and not maintained as a side line. Mr. Newman said that apples and other fruits can well be combined, each having a separate piece of ground and being given to special care and cultivation. Thinning of trees and fruit and the growing of fewer varieties were advised.

"The Proper Handling of Our Best Export Apples" was taken up by Mr. R. W. Shepherd, of Como. His address was very interesting and will be published in a later issue of THE HORTICULTURIST in full.

Dr. Jas. Fletcher, of the Central Experimental Farm, Ottawa, spoke on "Injurious Insects." The Codling Moth and San Jose Scale were fully dealt with. Remedies to prevent or lessen their ravages were mentioned. Recent ravages on shade trees by the Tussock moth were also alluded to and immediate action was advised. The most approved methods of destroying it are collecting the conspicuous white egg masses in winter and spraying in summer.

Mr. G. Reynaud, of La Trappe, in a paper on "Soils that may be Devoted to Fruit Growing," pointed out that much land now uncultivated could easily be made profitable by planting fruit trees. Mr. Reynaud is always a favorite speaker at the conventions of the association.

Mr. R. Brodie, of Westmount, gave an excellent paper on "How to Set Out an Orchard." It was claimed that in the past the great fault with Quebec orchards had been that the trees were set too close, and in 15 or 20 years they become overcrowded. This resulted in the branches becoming interlaced and the fruit being off color because of lack of sunshine. Limestone soil was mentioned as being best for apples.

In discussing the treatment best suited to an orchard for the first 10 years, Mr. W. Saxby Blair said that it was not necessary to give extra cultivation or extra fertilizers, but that to get good crops each year a system of cultivation must be followed that will give wood growth early in the season and later on fruit buds.

A resolution was passed expressing appreciation of the work of Sir W. C. Macdonald in establishing an agricultural college at St. Anne de Bellevue and equipping it with an able staff of professors.

Messrs. J. C. Chapais, G. Reynaud, J. M. Fisk, N. E. Jack, R. W. Shepherd and R. Brodie were appointed delegates to the Dominion Conference to be held at Ottawa in February.

Would Increase the Tariff on Fruit

A. B. Cutting, B.S.A., our Special Representative

AT a mass meeting of the fruit growers of the Winona and Grimsby sections, held at the latter point, Dec. 21, it was decided, after a lengthy discussion, to petition the Dominion Government, through the tariff commission, for the following increases in the tariff on fruits:—

On peaches, from 1 cent a pound to 2 cents.

On pears, from 20% ad valorem, to 1 cent a pound specific.

On plums, from 25% ad valorem, to 1 cent a pound specific.

On apples, from 40 cents a barrel to 75 cents a barrel.

Messrs. J. W. Smith, E. D. Smith, M.P., and Murray Pettit were delegated to bring the resolution before the tariff commission. St. Catharines growers were invited to attend, but unfavorable weather prevented them from doing so.

Two meetings to discuss this question were held recently, one at Winona and one at St. Catharines. At the former, the trend of discussion showed most emphatically that the growers of that district were unanimously of the opinion that an increase in tariff should be asked for on certain classes of fruit, including peaches, pears, plums and apples. In reference to this Mr. A. H. Pettit, of Grimsby, said, "A high tariff on peaches will not effect the local market so very much, but it will increase the sale and consumption of Ontario peaches in the North-west. At present North-west dealers prefer California peaches to ours, as they, being better bodied and longer keepers, though lacking in quality, will stand on the market shelves a week without spoiling, and as a result the North-west is asking for a decrease in the duties. As for apples, the question of tariff is important, particularly in the fall apple trade. We want an increase as under the present tariff the United States floods our markets with their surplus of early varieties. Large quantities of pears and plums also come into this country from over the line in competition with home-grown varieties."

At St. Catharines, fruit men from the different sections of the Niagara district were present, but the majority were growers from the immediate vicinity of the city. The expression of opinion on the tariff was far from unanimous. Most of the St. Catharines growers supported the action of the Ontario Fruit Growers' Convention at Toronto, in November, which waited on the tariff commission and asked that the tariff on fruits be left as it is; while the growers from Grimsby and Winona advocated an increase. A change from ad valorem duties to specific was suggested, in the case of pears and plums, from 20% to 25% respectively, to ½ cent per pound, the other duties on fruits to remain as they are. This was moved and carried by a majority of one, and cannot be said to express the views of fruit growers in general.

At the recent meeting in Grimsby, Mr. E. D. Smith, M.P., of Winona, said that the action of the Ontario Fruit Growers' Association, influenced as it was by Mr. W. L. Smith's sympathetic address, does not coincide with the opinion of the growers of this province as a whole. "The great majority were not consulted," said Mr. Smith, "and though we appreciate the work of the Ontario Fruit Growers' Association in general, we have no right to back the organization when it has taken a wrong step." He advanced many arguments for an increase in the tariff. We are not going to make fruit more expensive for the home consumer by adding the increase in the duties to the price of fruit, but a higher tariff will keep out foreign fruits, thereby lessening the supply, and as a consequence, by virtue of creating a greater demand, the fruit business will be more profitable for the grower. In the North-west market, also, the demand for our fruit will increase. Buyers there will handle our fruit in greater quantity than now, because of its cheapness under increased duties, as compared with that from over the line, to say nothing of the advantage our fruit has in quality."

Mr. A. Greenwood, of Grimsby Park, cited some instances in which Ontario fruit has been preferred in the North-west to that from California. One consignment of Ontario fruit the past season brought $2.25 per 35 pound box, against $2.00 per 50 pound box of California fruit, the same day and in the same market. Mr. Greenwood contended that even to-day our fruit is preferred to Californian, but, under the present tariff, the foreign article captures the market on account of its cheapness.

A comparison between the existing duties on fruits and the cost of production was brought out by Mr. J. W. Smith, of Winona. The duty on small fruits is two cents a pound. This class of fruit is comparatively easy to grow, returns are secured within a year or so after planting, and the market for such does not fluctuate so much as the market for pears and other tree fruits; the grower of small fruits can form in advance an approximate idea of the demand and price for his fruit a year hence. On the other hand, the duty on pears is 20 per cent. ad valorem, or about one-quarter of a cent a pound. Pears are expensive and difficult to grow; they require a much longer time to produce a crop—best varieties, 12 to 15 years; the market for pears is not so stable as that for small fruits; and the pear planter cannot form the slightest idea of the condition of the pear market 15 years hence. For these reasons, Mr. Smith believed that the duty on pears should be increased to an amount equal to that now imposed on small fruits.

The relative costs of plants and work to plant an acre of different classes of fruit were estimated by Mr. Smith as follows:—Strawberries, 7,260 plants, $14.50; setting plants, $8.00; total, $22.50. Grapes, 450 vines, $14; 150 posts, $20; setting posts, $10; wire and hanging, $10; planting, $2.50; total, $56.50. Plums, 200 trees, $50; planting, $6; total, $56. Peaches, 200 trees, $30; planting, $5; total, $35. Pears, 200 trees, $50; planting, $7; total, $57.

The labor problem was referred to by Mr. Jas. Tweddle, Fruitland. The cost and scarcity of labor increases the cost of production. Manufacturers here at home and labor employers in the North-west are taking our best men. We cannot afford to pay the high wages offered by these men and as a consequence good farm hands are hard to secure. This condition of affairs could be mitigated by an increase in the tariff on fruits.

The annual meeting of the New Brunswick Fruit Growers' Association will be held January 25, immediately following a two days' session of the Farmers' and Dairymen's Association. Prizes will be offered for a display of winter fruit. Among the speakers whom it is expected will be present are Mr. W. T. Macoun, of the Central Experimental Farm at Ottawa, and Prof. F. C. Sears, of Truro, N.S.

The average farmer should have from two to five acres in an orchard, and should attend to it well. An orchard, unless well attended to, is valueless for commercial purposes. Farmers occupied in general farming have not time to take care of many trees.—(A. Shaw, Walkerton, Ont.)

Practical Pointers from Practical Men

Picked up and Penned by A. B. Cutting, B.S.A., the Special Representative of The Horticulturist, who is Visiting the Homes of Fruit and Vegetable Growers

THE privilege and the pleasure afforded me, during the past few weeks, of visiting some of the fruit and vegetable farms of this province, more particularly along the shore of Lake Ontario, between Toronto and Hamilton, has given me the opportunity of hearing at "first hand" the opinions of growers on different phases of their various pursuits. I have picked up pointers on proper methods of orchard management, on market economics, on the tariff question and on other topics of interest to the readers of THE CANADIAN HORTICULTURIST.

From observations made in certain localities it would seem that some of our local fruit and vegetable growers' associations are not taking full advantage of their opportunities during the winter months. In some places, these organizations hold meetings only once, twice or perhaps three times a year, and then only for business purposes. The business factors of the fruit industry are important, and too much attention can scarcely be given them, but they are not of more consequence than the factor of orchard management. Some associations discuss only the questions of markets and marketing. They fail to realize that there is always a market for the best in any commodity, but that the best is not always produced. In the fruit industry there is a most decided surplus of the ordinary. For this reason it is of advantage for each association to meet at least once a month during the winter season, as I find is the custom of the most progressive organizations, for the purpose of discussing and exchanging ideas on pruning, spraying, cultivation and on all the many practices that are needed in the production of high grade fruit. Such "experience" meetings should be more informal than those visited once or twice a year by speakers from the Department of Agriculture. By carrying on a series of local meetings, some of our associations, now inactive in this respect, would profit by the change.

FRUIT WORK IN CLARKSON

One of the most progressive local fruit growers' associations is in Clarkson. The officers are: Wm. Oughterd, president; Robt. Shook, secretary; and Wm. Clements, treasurer. Regular meetings are held on the first Saturday of each month, when all questions relating to fruit are freely and thoroughly discussed. The area devoted to fruit growing in Clarkson is taken up largely with small fruits, followed, in order of extent of culture, by apples, cherries, pears and plums. Next season, according to Mr. Clements, about 1,000,000 quarts of small fruits will be grown. The association buys all the working material for the members, including barrels, crates and berry boxes. They have a trade mark for their packages registered in Ottawa so that returnable crates and boxes can be claimed and located when lost, strayed or stolen.

OUR TARIFF ON FRUITS

Although the Ontario Fruit Growers' Association, in convention assembled in Toronto last November, decided not to ask for a higher tariff on fruits, and although the stand of the association is supported by the opinion of fruit growers in general, yet there are some who claim that the action of the association is not in accord with the best interests of the industry. Mr. P. Y. Babcock, a well-known shipper of Burlington, believes that we need a material increase in the duties. In the words of Mr. Babcock: "The Canadian fruit grower is handicapped by climatic conditions, by a high American tariff, and by the high cost of labor, and should be protected against foreign importations by a higher tariff. In support of this, I can get hundreds of names in the Niagara district to sign a petition for more tariff." Mr. E. Thorpe, Burlington, in his own peculiar way, supports the views of Mr. Babcock, and said to the writer: "I'll bet money that those fellows at the fruit convention who don't want more tariff must have had a jag on. We certainly want more duty on strawberries and on early vegetables. Under the present tariff we cannot sell at a paying figure in Toronto on account of competition from over the line." Another grower, and a neighbor of Mr. Thorpe's, thinks differently, as he told the writer that he did not fear competition from American fruits, as home-grown fruit is far superior in appearance and quality to that imported from the other side. In the face of these pertinent expressions of opinion, it is fit to remark that, when growers themselves fall out, the tariff is safe.

THE FRUIT DIVISION AT OTTAWA

Many and to the point are the comments from growers regarding the placing of the fruit division at Ottawa under the control of the dairy commissioner. That this condition of affairs should not be is the unanimous opinion of fruit growers everywhere I go. That the chief of the fruit division of this country should be given a back seat and made subservient to the dairy commissioner or any other commissioner is most humiliating to the fruit growers and not conducive to the extension of fruit work. On all sides I hear a general tone of disapproval and protest against this action of the Dominion Minister of Agriculture.

Among the many growers who have expressed their opinions on this subject, Mr. J. S. Freeman, Freeman, Ont., said: "The fruit industry of Canada is large enough and far enough advanced to warrant the appointing of a fruit commissioner, responsible only to the Minister of Agriculture. The fruit division should be placed on a par with the dairy and other divisions and should be given the place its importance deserves."

On this question Mr. J. C. Smith, Burlington, remarked: "I think that the fruit division should receive more than second-hand attention. The fruit industry has attained enormous proportious, and this should be recognized by the appointment of a fruit commissioner separate from the dairy division, and responsible only to the Minister."

FRAUDULENT PACKING AND SELLING

Another matter referred to by a prominent shipper in Burlington was the fact that the Dominion force of fruit inspectors should be increased at least threefold. Although the present inspectors are competent and are doing excellent work, they cannot be everywhere at the same time. "During the past season," said the shipper referred to, "some very marked cases of fraudulent packing have come under my personal notice. In particular, I can cite the case of buyers coming here from France who were taken advantage of by the packers in a certain section of Ontario. I saw in one house, growers packing windfalls for XXX fruit, the packers were boasting about how they were soaking the poor Frenchmen, and this was going on right in the face of the inspectors." This is a most deplorable state of affairs, and should not be allowed to occur another season.

When speaking of our foreign commerce in fruits, Mr. J. C. Smith said: "I do not think that peaches and plums can ever be shipped regularly and with success from here to England. Our peaches haven't the body, the dryness and the carrying qualities of western fruit, and should not be expected to compete with the California fruit in the foreign market. Furthermore, we haven't yet secured a system of refrigeration that can be depended upon to carry fruit safely to England. The best kind of refrigeration, however, is of no value unless we first cool our fruit before it enters the car for transport to the seaboard. Present refrigerator cars cannot cool fresh picked fruit quickly enough. Fruit must first be cooled for best results; it will save ice also, as the cars can then go from here to Montreal without re-icing."

A letter from England to the Biggs Fruit and Produce Co., Ltd., Burlington, says, in part: "Prices for apples are now good—Kings most in demand, some selling as high as 9s. per 40 pound box. We advise the wrapping of all Spy apples, as they are so easily bruised. The more I see of the Biggs case the better I like it. The first impression is undoubtedly unfavorable, but as soon as buyers get used to them, they go with a swing."

IT PAYS TO SPRAY

"This year I had buyers in my orchard competing against each other for my crop of apples, which averaged 75% XXX stock. I credit the excellence of the crop to good pruning and cultivation, and particularly to the methods of spraying that were employed, as recommended by Prof. Lochhead, of Guelph, and by THE CANADIAN HORTICULTURIST. Systematic spraying gives results. Three years ago, when spraying was not practised in this orchard, I could scarcely sell my apples for any price, because they were unsound and undersized." So said Mr. A. C. Cummins, of Burlington, who is a firm believer in the value of spraying, and quite rightly, for his apples the past season, particularly his Spys, were among the finest grown in the Burlington district.

PEARS FOR THE BURLINGTON DISTRICT

Mr. Wm. F. W. Fisher, president Burlington Horticultural Association, is the owner and manager of one of the best fruit farms in his locality. Among the many kinds of fruit grown on his place, the pear is very much in evidence. The writer happened upon Mr. Fisher in the act of directing and assisting the pruners in a young orchard of dwarf pears, and obtained a few pruning pointers that are of value to all. "As far as the time for pruning is concerned," remarked Mr. Fisher, "I believe somewhat in the old rule 'whenever the knife is sharp,' particularly here where labor is scarce, but for ideal results pears should be pruned in late winter for wood growth, and in early summer to induce fruitfulness. The form of the tree should be kept in mind and made pyramidal, a central axis should be maintained as far as possible, the superfluous limbs and all branches that rub and cross should be removed, and the remaining branches should be well headed back, pruning away about two-thirds of the new growth."

Mr. Fisher recommends for his district the Bartlett, which is the best of all; Boussock, an old variety of same season, good size, fair quality, with tree free from blight, not very early bearers, but long-lived; Duchess, an excellent export pear; Howell and Kieffer.

BUSH FRUIT CULTURE

A method of pruning red raspberries practised by B. E. Chapman, of Bronte, is very effective, even though it does appear as though the same ground is gone over twice. Mr. Chapman adopts the hill system of culture and prunes three times during the year. In summer he nips back the new growth as soon as it has reached the height of the fruiting canes, say three and a half feet. After the berries are harvested, he hooks out all old canes and all new ones above six in number. The following spring he prunes back all canes that may have

been winter-killed and completes any work that may have been overlooked at the previous prunings.

Mr. T. G. Ruddell, of Oakville, has five acres of red raspberries that he grows in hedge rows. His method of pruning is somewhat similar to the above-mentioned, except that instead of leaving six canes to a hill, he thins out so that the new canes will stand about 10 inches apart in the row, and in spring, he is particular to cut back to a uniform height, about three feet, so that the hedge row will be level and neat in appearance. Mr. Ruddell grows the Marlboro and Cuthbert most extensively; for black caps, he plants Souhegan, Palmer, Lucas and Gregg. He also has a large plantation of blackberries, made up largely of Snyder for main crop, and Worchester Thornless, a productive, hardy sort, medium size, mid-season, and with smooth, thornless canes.

STRAWBERRIES

In Oakville a large area is devoted to the culture of strawberries. Mr. Ruddell has 10 acres, seven of which consists of Lovetts, which he considers the best commercial berry. It is quite large, of dark color, firm, rather tart in flavor—a good point in a shipping berry, and it is one of the very few varieties that will hang on the vines after ripening for three or four days without deteriorating.

Mr. W. F. W. Fisher, of Burlington, is another strawberry enthusiast. He said: "The Williams is the best and most profitable variety I have ever grown. It is an excellent shipper and can be cropped for two years without diminishing in size or yield." Among other varieties suggested for his locality are Bederwood, medium size, very prolific and early; and Sample, a pistillate variety, large, good color, productive and a good all-round berry for market purposes. Mr Fisher believes in cropping his plantation twice. In his own words: "Whether one or two fruitings should be taken off depends largely upon the availability and cost of labor. I myself harvest two crops. I keep the soil in good condition and well fed, and when planting I select the best plants for the new plantation. The second cropping is always earlier in season than the first one and this is important in this district,"

A NEW SYSTEM

Mr. W. A. Emory, of Aldershot, president Ontario Vegetable Growers' Association, has adopted a new system of growing strawberries which he calls the "hedge row system." A side-by-side test with the old "matted row" system has shown Mr. Emery that the new system is the better one. It requires more work than the old method, but returns justify the labor as the profits are doubled. In the "hedge row" system, the rows are kept as narrow as possible; the plants are set at intervals of 2½ feet in rows 3½ feet apart. Each of the mother plants are allowed to set four new plants, two on either side and the rest of the runners are cut off. The earliert runners are allowed to root so as to secure strong, healthy growth before winter. Among the many advantages claimed for this system by Mr. Emory are: 1. It is a happy medium between the matted row and hill systems and combines the good qualities of both. 2. It does away with what is always lacking in vigor of plant and in yield of fruit in the centre of matted rows. 3. All the productive effort of the hedge row is brought to maturity. 4. Each hedge row will produce twice the yield of matted rows. 5. Fruit is larger and better colored than from matted rows. 6. Plants are stronger and freer from disease. 7. Fruit can be picked without injuring plants and crushing over-hanging berries. 8. The plants can be cropped oftener than when grown in matted rows.

I used to go in for general farming but now grow fruit, and find that it pays better than wheat at $1 per bushel, even if we don't get a crop of peaches more than every third year.—(C. S. Nelles, Grimsby, Ont.)

POULTRY DEPT.

Conducted by
S. Short, Ottawa

JANUARY is the critical month for the poultry keeper. The results of last season's matings and hatches can be seen at a glance, and whether or not any of the young stock are fit for the show ring. The birds are now mature and in full plumage, defects in which are apparent. Notes can be taken for help in mating next spring. April and May hatched pullets should now be laying. If breeding for winter eggs, the pullets laying earliest should be marked so that they may be used for breeding next season. There were a good many flocks of poultry composed of the following: old hens of various ages, cockerels and pullets, kept together in the same pen, and the result is misery to them all. There are but two excuses for keeping hens of the American (Plymouth Rocks and Wyandottes) and Asiatic (Brahmas and Langshans, etc.) breeds after they are two and a half years old. The first is —if the bird is a high-class exhibition specimen or breeder of exhibition specimens, and secondly, if she is an exceptionally good layer and likely to be a breeder of good layers. That she is a splendid sitter and mother is the reason given for keeping some scaly-legged spurred old veterans. This is not a good reason.

Seventy-five per cent. of all the hens that cluck make just as good sitters and mothers the first time they cluck as they will at any time in their career. The old hens should have been taken out in October or November, and the pullets would have done better. The cockerels are sufficiently mature to select any birds needed for breeders; the rest should be disposed of and in the meantime kept separate from the females from which winter eggs are expected.

The poultry houses should be made as light as possible. Overcrowding should be avoided. Each bird should have eight or ten square feet of floor space. Two pens with 25 fowl in each are better than one pen with 50. Ventilate. Dry pure cold air is better than damp vitiated warm air. The subject of ventilation will be dealt with at more length in our next issue. The successful production of winter eggs and the hatching of chicks from eggs laid in winter quarters, depend more on proper ventilation than any other factor.

NOTE—In adding a poultry column to THE HORTICULTURIST, the management hope that it will prove of interest to our many readers. The addition is in the way of enlarging the usefulness of this magazine. The poultry column will be devoted to seasonable and general information, including the care, housing, breeding and exhibiting; in fact, poultry keeping in all its branches. Believing that many of our subscribers keep poultry in a small way as much for pleasure as for profit, this column will be conducted more for their help and interest than for the expert fancier or large breeder who raises poultry for a livelihood.—(Editor).

The manager of the Oakville Fruit Growers, Limited, the co-operative fruit growers' association at Oakville, that was described in the November HORTICULTURIST, desires to explain that while the fruit of the growers is stored in bins before it is graded, as stated in THE HORTICULTURIST, the apples are not stored in bulk, but kept in barrels in a separate compartment for each grower. The price paid by the association for barrels this year was 33 cents.

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Mr. A. N. Brown of Wyoming, Del., who so recently addressed the Ontario Horticultural Society, writes Nov. 25th, 1905—"*You have conferred a great boon on the American Fruit Grower.*"

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WRITE FOR CATALOGUE

C. B. REECE St. Catharines, Ontario

Fruit Inspection at Montreal

E. H. Wartman, Dominion Fruit Inspector.

THE shipment of apples by steamers from the port of Montreal has ended for 1905. The season from beginning to end was one of great activity. Notwithstanding the reports, both early in the season and later on, that apples were only 50% of the crop of 1904, yet the aggregate shipments from Montreal, of over half a million barrels, was many thousand barrels greater than last year.

Many ask, How do you account for this? In the first place, prices on the other side for XXX fruit were so promising that in some cases 20s. were paid for XXX all varieties of apples. This rather spoiled the shippers, and led some of them to ship very poor XX and even X apples in large quantities. As an XX barrel of apples is not defined by law, the minds of many shippers were very elastic, and many thousand barrels went forward that could have been used in our own country to better advantage. However, it is hoped the law will soon define a No. 2 apple so that we can look for a fair quality of apples under this designation, which will fill a commercial want, while the poorer qualities can be used in other ways.

The season on the whole has not been a profitable one for shippers or ship owners, owing to the disastrous accidents that some of the big steamers, viz., the Victorian, Bavarian, Eupheme and others, met with. It is to be hoped that the blame for running such costly steamers on rocks will be attached to the right parties, that the effect may improve our future trade.

We should be encouraged, as fruit growers and shippers, when we see such markets as Britain, Germany, France, South Africa, Japan and Australia open for our fruits. Need we fear the future? I would think not. I heard fruit growers 25 years ago say: "We are getting only $1 per barrel for our fruit this year, what is the use of setting out more trees, for in 25 years apples won't be worth picking?" The 25 years have passed and where are we to-day? Retailers in Montreal for a first-class barrel of Spy apples ask $4.50, and say, with an independent air, that it is their best figure for such stock. So we see our fathers made mistakes in their day. The man who has a large orchard of good varieties, well cared for, has a gold mine.

The men who put up apples this season that were strictly in accordance with the Fruit Marks Act, are the men who will succeed and who are a credit to our country. But the men who, from time to time, mark No. 2 fruit No. 1, and who put any trash under No. 2 and No. 3, cannot expect to succeed or be benefactors to our great commercial fruit trade.

The inspection of fruit at the Port of Montreal this season involved the opening of 8,000 packages, and it has given the inspectors a good idea of the season's pack as compared with 1904. It is their opinion that Canadian growers show a marked advance in packing, and they can attribute their success largely to co-operation and co-operative packing, in most cases this season, on account of the uniformity of the quality of the fruit in the packages, has been highly commendable.

The increase in boxed apples this season over last was 16,584 boxes. This small parcel requires only moderate pressure to keep the fruit tight, and very few packages showed signs of injury by bruising. On the other hand, apples in thousands of barrels were materially injured by too hard pressing, which caused early decay. If many a manipulator of the apple press could have seen the damage he was doing by unskilful work, it would have been a lesson of a lifetime to him.

The handling of apples for export in boxes is, comparatively, a new thing, and the boxes are not handled with the care they should be. Freight handlers have no more right to drop a box of apples than a box of eggs, as both are injured by a fall. The dropping business does

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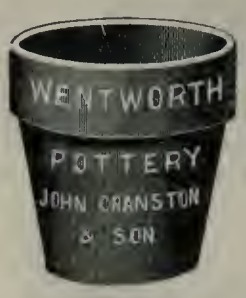

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not facilitate speed, but rather retards it when the time required to pick up broken pieces and cooperage is considered. As inspectors at this port we insist on the handling of apples in boxes in the same way eggs are treated, and the system will not be complete until this has been accomplished.

The eight wood hoop barrel has been in the majority this season, and it is to be hoped that there will not be a six hoop barrel offered to exporters another season. Wire hoops on apple barrels should be discouraged. Nailing hoops at either end into the fruit is a barbarous habit.

Windfall apples should be always marked windfall, so that the purchaser will not count on their keeping quality. When all these little factors that compose a perfect parcel are observed, we may hope for full success, and not until then.

Prince Edward Island Notes

Rev. Father A. E. Burke, President Prince Edward Island Fruit Growers' Association

WE quite appreciate the advantages accruing to local horticulture from the opening in a valuable magazine like THE HORTICULTURIST of a permanent department wherein all its needs and aspirations may find ready expression. Nothing can better respond to our feelings as orchardists, and make more effectively for the spread of sane ideas and practises amongst us. One only regret—that some one better qualified to speak for the Island and so important a branch of its agricultural activity than ourself, has not taken up the task! However, we shall simply break the ice, if anything so frigid can be said to exist between us and the general horticultural educationalists of Canada, and whenever found, relinquish without a murmur this special column to the man best qualified to make it useful to us and creditable to all.

Despite the difficulties of winter communication, our growers of apples showed up well at the Winter Fair, Amherst, last month. The apple exhibition was away in advance of other years; and, covering such an extent of territory, wonderfully uniform. The sweepstakes exhibit by Mr. D. S. Collins, of Kings County, N.S., constituted a picture in itself. How more perfect fruit could be found it would be hard to say. His varieties, too, were eminently commercial. Ten varieties were called for, and they were furnished as follows: King, Spy, Golden Russet, Nonpariel, Blenheim, Stark, Baldwin, Ribston, Gravenstein and Fallawater. This exhibit would command admiration anywhere. In Nova Scotia the Blenheim is a most successful apple. It was known as Gravenstein in the past; that day is done.

New Brunswick only swung into line last year in the establishment of a Fruit Growers' Association. We all felt that it should organize as it could grow good fruit. What is the consequence? A splendid impetus in so short a time to all kinds of orcharding. Its apples at Amherst were in many cases admirable.

The Bearing Wood of Currants

Regarding the pruning of currant bushes Mr. A. W. Peart, of Burlington, informs THE HORTICULTURIST that red currants do not bear on the previous year's wood as was stated in a report of the address that he gave at the Ontario Horticultural Exhibition.

Red currants bear on spurs grown on wood one year old and upwards, and in a measure at the base of last year's shoots. Black currants bear chiefly on wood of the previous year, and to a limited extent on spurs from old wood. These points should be considered when pruning the currant bushes.

In packing apples in boxes the fruit must be uniform in size and type. By facing the box with the stem end upward the bruises show far less.—(Harry Dempsey, Reduerville.)

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Dishonest Packer Caught

J. J. Philp, Winnipeg, Man.

Dishonest fruit growers are beginning to realize that they are not certain to escape detection because they choose country points in Manitoba or the Western provinces, in preference to Winnipeg, as a field for their exploits. A large shipment sent by Mr. Archibald Patterson, of Ridgetown, Ont., was condemned recently because of the great proportion of inferior fruit it contained. In January, 1904, Mr. Patterson was fined for a similar offence, but the lesson was not forcible enough. Since that time, however, he has done business chiefly outside of Winnipeg.

A careful examination of the fruit showed that nearly half of it was marked the wrong grade. The agent for the consigner was fined $1.00 and costs for each package falsely marked or falsely packed. The entire cost to the shipper will aggregate considerably more than the fine.

The majority of Ontario shippers are honest, and make an honest endeavor to pack their fruit properly and comply with the requirements of the law. Letters are received frequently from packers, who have been notified of defects, expressing thanks for pointing out these mistakes, and promising to exercise more care in the future.

Carry a Pocket Lens

A. McNeill, Fruit Division, Ottawa

No farmer and, more especially, no fruit grower should be without a pocket lens. It is perhaps as valuable in its use as a pocket knife, though not so frequently called into requisition. With it a farmer can immediately make an examination of seeds, note insect pests and fungous diseases on plants, and abnormal conditions everywhere.

The orchardist cannot work intelligently without it. It answers all practical purposes for the examination of clover, timothy and other small seeds. In fact, in innumerable ways, it may save the farmer hundreds of dollars each year.

Controlling Nature

Everybody knows that of late years natural forces have been wonderfully subjected to man's need. People now living can remember when the number of edible fruits and vegetables was far less than at present and even those that could be grown were vastly inferior to what we now have. For example, our parents knew nothing of the tomato except as a curious ornament in the garden. Sweet corn was hardly better than the commonest field sorts. All oranges had seeds. Celery was little known and poor in quality. In the flower bed the magnificent pansy has replaced the insignificant heart's ease from which it was developed, and the sweet pea in all its dainty splendor traces its origin to the common garden vegetable.

This progress has been made in spite of the great tendency manifested in all plants and animals to go back to the original type. It is indeed a battle to keep strains pure and up to the standard they have already attained, let alone any improvement. The practical results are accomplished by men operating largely for love of the work, like Luther Burbank in California and Eckford in England, as well as by the great seed merchants, D. M. Ferry & Co., of Windsor, Ont., who are not only eternally vigilant to hold what ground has been gained, but have a corps of trained specialists backed by ample means to conduct new experiments. The results of their experience can be found in their 1906 Seed Annual which they will send free to all applicants.

The onion growers of the section surrounding Scotland, Ont., asked the Tariff Commission for a duty of 25 cents a bushel instead of 25 per cent. Growers in that district produce 60 carloads of onions a year.

Money Made by Having an Evaporator

THE splendid results that may be obtained by fruit growers with large orchards, through the use of evaporators, is clearly shown by the returns secured last fall by a leading grower in southwestern Ontario, who made enough from his evaporator in two months to pay for its cost, although he paid $350 for it. This gentleman, who is an officer of a fruit growers' association, was interviewed by THE HORTICULTURIST at the time of the Ontario Horticultural Exhibition. He stated that while the information he furnished was absolutely correct, he did not care to have his name used, for fear the people who read the article might come to the conclusion that he was exaggerating.

"There are," he said, "30 acres in our orchard. The evaporator we use is capable of handling 300 bushels of apples a day. It cost $350, and we kept it running for two months, and I believe it paid for itself in one season. Last year was the first season we used it, and its capacity was 100 bushels. This year we enlarged it. By means of this evaporator we are able to save all kinds of windfalls and cull apples that would otherwise be lost. It should last 25 years.

"We keep one to two men busy all the time picking culls and gathering windfalls. Probably 800 barrels of this fruit is saved. In addition to the apples gathered in our own orchard, we buy about 500 barrels from growers in our vicinity. This year we made a profit of about $1,200 net, which is not too bad when we remember the small cost of the machine which was bought from the Brown, Boggs Company, of Hamilton. The parts of the evaporator cost us as follows:—For each machine we paid $8.25, and we have six; the slicer for the six machines cost $25, and three furnaces complete with pipes, $60 each, or $180. The building we use for peeling and paring is an old one not worth $100, that was used for a cellar and storehouse. Were we to build it new it would not cost $50.

Wood is used for fuel which is bought from an Indian Reserve near our place. Squaws and girls do the peeling, and they are paid four cents a bushel for peeling and trimming. All the peelings and cores are dried and in this way there is no waste. Last fall was an exceptionally good one for the evaporators, as apples were scarce and in good demand. We received 8 cents a pound for output, while in 1904, 5½ cents was considered a high price. We sold the output of our evaporators to wholesale dealers in Hamilton, Toronto and New York, who shipped it to Germany. We are now in correspondence with a firm in Germany and trust to be able to sell them direct next year."

A Successful Firm

The well-known seedmen, J. J. H. Gregory & Son, of Marblehead, Mass., are celebrating their 50th anniversary as successful seed growers. For half a century they have been introducing seeds of improved vegetables to planters, farmers and gardeners throughout the country. During this time they have built up a great business and a still greater reputation for reliability. Their seeds are relied on to be fresh, pure and sure; and that this is true is proven by the fact that they are used universally by florists and gardeners.

In addition to raising the standard of ordinary varieties, many vegetables, prominent in the agricultural field to-day, were originated by this old seed firm. They are past masters in the art of introducing new and desirable varieties.

Any one intending to plant seeds of any kind should send to Messrs. J. J. H. Gregory & Son, Marblehead, Mass., for their new catalogue. It is a handsomely illustrated booklet, in which are photographic reproductions of many new varieties of interest to all. Sent free to those who write for it. A postal will bring it.

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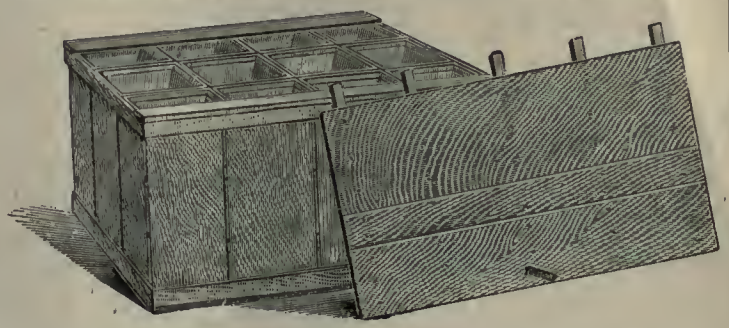

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The Canadian Horticulturist

Vol. XXIX FEBRUARY 1, 1906 No. 2

The Dominion Possibilities for Horticultural Development

Alex. McNeill, Chief of the Fruit Division, Ottawa

"Methinks I see in my mind a noble and puissant nation rousing herself like a strong man after sleep, and shaking her invincible locks; methinks I see her as an eagle renewing her mighty youth and kindling her undazzled eye at the full mid-day beam."—Milton.

THE problem of the twentieth century in the northern half of the American Continent is nation-building, and in this process Canadian horticulturists will have a prominent part. Fortunately our patriotism has a broad and substantial basis in the vast material resources that lie about us everywhere. Field, forest, fisheries and mines are yielding their increases lavishly, ministering to our physical needs and furnishing a generous foundation for the highest development of civilization. But this higher civilization has its beginning in the homes of the people. Love of country is but a broader love of home. The truly patriotic Canadian will not be content with simply sharing with his less fortunate brother the material blessings that lie thick around him, but will plant and water the land, making and keeping it beautiful—a land of homes.

Canadian fruit growers have every reason to be proud of the position that they have always taken in competition at fairs and exhibitions with growers from other countries. This success not only gratified our vanity, but proved an excellent drawing card for immigration purposes. At Chicago, Buffalo, St. Louis and many lesser fairs the Canadian fruit and flowers did as much as any other feature to direct attention to the youthful nation north of the lakes.

Within our own borders a healthy rivalry has developed between widely separated provinces. The result shows that trophies will not be allowed to rest anywhere without a struggle. Formerly Nova Scotia carried off the honors in quality; Ontario claimed first place in quantity and variety, if not in quality. Latterly British Columbia, with newborn enthusiasm, has pushed to the front in fruit products with an article that has captured the market with its beautiful finish and long keeping qualities. Quick to see an advantage, the fruit growers of British Columbia have adopted the packing methods and packages of the American Pacific coast, to perfect which the Californians spent years and a mint of money in experimenting. And thus the honors have travelled from the Atlantic to the Pacific, showing that pre-eminence in horticulture is not confined within the narrow boundaries of a few counties in any part of this great land.

The Bureau of Statistics shows that the apple crop alone of Ontario amounted to 10,000,000 barrels this year. A normal crop should be at least half as much more. No official record has been kept for the other provinces. The possibilities of British Columbia in the near future may be gauged by the fact that about 500,000 trees were imported and planted this season, in addition to those of domestic origin. Nova Scotia exports 300,000 to 500,000 barrels of apples annually. Prince Edward Island, according to unprejudiced judges, made the best exhibit of fruit in the Maritime Provinces this year. New Brunswick made successful shipments of Duchess apples to Great Britain for the second year. If this market continues there is no reason why the St. John Valley should not become as famous for the Duchess as the Annapolis is for the Gravenstein, the Province of Quebec for the Fameuse, Ontario for the Spy and British Columbia for the Newtown Pippin and Spitzenberg.

A Credit to Canada

"I want to congratulate The Canadian Horticulturist on its first number for 1906. It is a credit alike to its management and to Canada. Every Canadian who prides in the intelligent products of his country should feel proud of it, and I know that every fruit grower, and every lover of Nature in her many and varied forms must be more than proud of it."

T. H. RACE, Mitchell, Ont.

We have never yet had the different provinces adequately represented at one time at any show. The Fruit Division attempted last year to secure specimens of 10 varieties from each province and the result was a most interesting exhibit, but the competitive element did not enter to spur each province to do its best. Why cannot this be worked out for next year? Cold storage will enable us to hold our fruit so that we can assemble it at its best in one place. It would be a revelation to visitors, an advantage to the fruit growers of every province, and a lesson in patriotism many times more valuable than flag-waving or the resurrection of disreputable quarrels with our neighbors.

CO-OPERATION NECESSARY

The commercial side of fruit growing will form a subject of increased importance to fruit growers as the years pass. The co-operative idea cannot legitimately end with work in any particular neighborhood. The whole trend of the movement looks towards a co-ordination of the different units, calling for strong organizing power that will strengthen the position of the fruit growers throughout the Dominion.

This question of markets lies at the very foundation of the industry, and the exploiting of new markets and the careful supplying of the old is a subject that must be handled definitely within the near future. British Columbia is competing with Ontario; Ontario is competing with Quebec and Nova Scotia; Prince Edward Island and New Brunswick are struggling for a position in the markets side by side with the other provinces. All these interests have a place, and there can be no proper division or co-operation in the supplying of these markets without a view that will embrace the whole of Canada. Some organization or medium is required through which fruit growers may speak, and thus be an active agent in so harmonizing the interests of the different provinces that they may pull together, securing for the fruit grower a proper reward for his toil. Without some method of harmonizing the different interests, it is probable that what should be simply a friendly rivalry between the provinces will develop into a destructive antagonism. Through all the diversity of soil, climate and situation there runs an identity of general principles under-

lying the practices of fruit growers from Prince Edward Island to Vancouver. The details, however, may vary to a remarkable degree. In British Columbia clean culture is practised in the dry portions, but in the coast orchards it is not considered so essential. In southwestern Ontario clean culture gives the best results, but in the north and east not infrequently sod orchards properly managed succeed best. But the underlying principle is the same in sod or clean culture, viz.: regulate the moisture and plant food to the needs of the tree according to the supply from the soil from irrigation or from rainfall. Indeed the proper investigation of the practices in the semi-arid regions of some of the British Columbia valleys would enable orchardists in the humid climate of Nova Scotia, with numerous running streams, to meet these conditions more intelligently.

By co-operating the fruit growers of our different provinces will be enabled to play a most important part in the wonderful process of nation-building, and will prove themselves to be true to all good words and works and to the heart Canadian.

Best Varieties of Fruits for Ontario

A STATEMENT showing the varieties of fruit suitable for planting in the different sections of Ontario was prepared at a meeting of the Board of Control for the Ontario Experiment Stations, held January 8 and 9, and is here published in part. The selections have been made only after careful tests at the different stations. Lists have been made showing the commercial varieties or those most desirable for market purposes, and the domestic varieties or those of special value for home use, for cooking or for dessert. In almost every case the varieties are mentioned in the order of ripening. Many varieties not included in this list do well under special conditions, but they are not as desirable as those mentioned.

This action of the Board of Control was taken owing to the recognized disadvantages facing inexperienced persons who desire to engage in fruit growing for profit because of the large and confusing lists that they have had to select from. A bulletin containing this information in detail and dealing fully with the conditions in different sections of the Province will be published shortly by the Board.

In apples the following were selected as being the best for Ontario. In summer varieties, Astrachans are considered suitable for all except the northern sections, and Duchess is recommended for all parts of Ontario. Among fall apples Gravenstein does well in every district excepting along the St. Lawrence River and some northern sections. Wealthy and Alexander are specially adapted to northern parts, McIntosh and Fameuse of special value in the St. Lawrence River district, and Blenheim is suitable for the best apple sections of Ontario. These varieties are highly recommended. Winter varieties were recommended as follows:—King, adapted to the best apple sections and most successful when top-grafted on hardy stocks; Hubbardston and Greening adapted to the best apple sections; Baldwin not suited to clay land; Northern Spy satisfactory in the best apple sections and suited for the northern districts if grafted on hardy stock; Ontario, a short-lived tree, but an abundant bearer to be used as a filler among long-lived trees, and Stark.

The varieties specially suited for domestic uses are as follows:—Transparent, Primate, Sweet Bough, Duchess, Chenango, Gravenstein, Wealthy, McIntosh Red, Fameuse, Blenheim, King, Wagener, Swaizie Pomme Grise, Greening, Tolman, Northern Spy, and Mann. Hardy varieties adapted for sections above North latitude 46 degrees, are given as follows:—Yellow Transparent, Charlamoff, Duchess, Wealthy, Hibernal, Longfield, Patten, Whitney, Hyslop and Scott's Winter. In crab apples, Whitney, Martha, Transcendent, and Hyslop are mentioned as being suitable for any part of the Province. The first mentioned is a large crab of high quality, suitable for dessert or cooking, and specially adapted to northern sections.

The experimenters at the various stations submitted lists of those varieties that are best suited for their respective districts. Mr. Linus Woolverton, of Grimsby, recommended the following for the Niagara district: Astrachans, Duchess, Alexander, Gravenstein, Blenheim, King, Greening, Baldwin, and Spy; and for domestic use, Harvest, Sweet Bough, Duchess, Chenango, Gravenstein, Shiawasee, Fall Pippin, Fameuse, King, Louise, and Spy.

For the Bay of Quinte section, Mr. W. H. Dempsey, of Trenton, recommended the following for commercial use: Duchess, Gravenstein, Trenton, Alexander, Wealthy, Fameuse, King, McIntosh, Greening, Baldwin, Ontario, Seek No Further, Spy, Tolman, Ben Davis and Stark; while for domestic purposes, Benoni, Primate, Gravenstein, Fameuse, McIntosh, Greening, Ontario, Spy, Tolman, Grime's Golden and Swaizie were said to be the best.

Varieties for the Burlington district, named by Mr. A. W. Peart, were, for commercial purposes: Astrachan, Sweet Bough, Gravenstein, Wagener, Seek No Further and Golden Russet.

From the Lake Huron district Mr. A. E. Sherrington, of Walkerton, recommended for commercial purposes: Astrachan, Duchess, Wealthy, Fameuse, McIntosh, Blenheim, Greening, Baldwin, Spy, Golden Russet, and Ben Davis; while for domestic use Transparent, Astrachan, Duchess, McIntosh, Grime's Golden, Blenheim, King, Spy, and Golden Russet are the best.

For the St. Lawrence district Mr. Harold Jones, of Maitland, recommended for commercial use: Duchess, Alexander, Wolfe River, Pearmain, Scarlet Pippin, Fameuse, McIntosh, Milwaukee and Golden Russet. The best domestic varieties are Transparent, Brockville Beauty, Scarlet Pippin, Fameuse, McIntosh, Blue Pearmain, Yellow Bellflower and Golden Russet.

The general list of the desirable varieties of pears for commercial use is as follows: Gifford, Clapp's Favorite, Bartlett, Boussock, Flemish Beauty, Howell, Louise, Duchess, Bosc, Clairgeau, Anjou, and Kieffer; and for domestic use: Summer Doyenne, Gifford, Bartlett, Flemish Beauty, Sheldon, Seckel, Bosc, Anjou, Laurence, Josephine and Winter Nelis.

Hardy varieties of plums of the different classes were selected as follows: European—Bradshaw, Imperial Gage, Gueii, Shipper's Pride, Lombard (liable to overbear, requires thinning), Quackenboss, Yellow Egg, Grand Duke, Coe's Golden Drop and Reine Claude (one of the best for canning); Japanese—Red June, Abundance, Burbank, Chabot, and Satsuma (red-fleshed variety suitable for canning); American—Extremely hardy and desirable where European and Japanese do not thrive, Aitkin, Cheney, Bixby, Mankato, Wolf, Hawkeye and Stoddard.

The general list of cherries suitable for the different sections of Ontario is as follows: Orel 25, Orel 24, Early Richmond, Montmorency and Russian 207.

The following varieties of peaches were submitted for the peach districts: Sneed, Alexander, Hynes, St. John, Mountain Rose, Early Crawford, Champion, Brigdon, Fitzgerald, Reeves, Elberta, Oldmixon, Stevens, and Smock. The best varieties for domestic purposes were given as follows: Hynes, St. John, Early Crawford, Oldmixon, Longhurst, and Stevens.

The following grapes of the different colors were recommended for the commercial districts: Black—Moore, Campbell, Worden, Concord, Wilder; Red—Delaware, Lindley, Agawam, Vergennes; White—Niagara and Diamond. For the northern sections the varieties recommended were as follows: Black—Champion, Campbell, Worden, and Wilder; Red—Moyer, Brighton, Delaware, and Lindley; White—Winchell, and Diamond.

How is This for Quebec—16 Fameuse Apples, All of Good Size, and on One Branch a Foot in Length?

Such fruit as this, the illustration of which was furnished by Mr. R. Brodie, of Westmount, Que., proves that Quebec is capable of holding her own in the production of certain varieties of apples. These are limited to the most hardy varieties. Mr. R. W. Shepherd, of Como, Que., president of the Quebec Fruit Growers' Association, reports that the following well-known Ontario varieties are too tender for Quebec: Hubbardston, Wagener, Baldwin, Fallawater, Northern Spy and Ribston Pippin. Recommended varieties include Fameuse, McIntosh, Winter St. Lawrence, Canada Baldwin, N. W. Greening and Windsor Chief.

DESIRABLE BUSH FRUITS.

The following varieties of currants were recommended: Black—Victoria, Champion, Lee, Naples, Saunders; Red—Cherry, Fay, Pomona, Red Cross, Victoria, and Wilder; White—White Grape. Blackberries—Agawam, Snyder, Eldorado, and for southern sections, Kittatinny. Raspberries: Black—Hilborn, Older, Gregg, Smith's Giant; Purple—Columbia and Shaffer; Red—Marlboro, Herbert, and Cuthbert; White—Golden Queen.

Experiments at the different stations show that many varieties of strawberries suitable for domestic use are very unsatisfactory for commercial purposes. Varieties marked (P) have perfect flowers, and those marked (I) are imperfect in the flower, and will not produce a crop unless some perfect variety is planted with them. Those recommended for commercial purposes are as follows: Splendid (P), Bederwood (P), Warfield (I), not suited for light sandy soil; Grenville (I), Williams (P), Saunders (P), Sample (I), Irene (I), and Buster (I). Recommended domestic varieties are as follows—VanDeman (P), Splendid (P), Excelsior (P), Senator Dunlap (P), Ruby (P), Bubach (I), Irene (I), Wm. Belt (P), and Lovett (P).

Fruits Suited to the Different Provinces

THE multiplicity of varieties of fruits recommended for planting in the different sections of Canada led THE CANADIAN HORTICULTURIST to gain the following information from growers competent to advise regarding the varieties specially adapted to the various climates and locations found in the different Provinces of Canada. The evils of having too many varieties is being felt more keenly as the fruit industry develops and it is now realized that it is best for growers to plant only a few tested varieties.

NOVA SCOTIA

The sorts best suited to the orchards of Nova Scotia are thus described by Prof. F. C. Sears, of Truro, N.S.: A selection of the best varieties for any one section is an extremely difficult question. It is a personal question and one cannot be sure that his selections will suit his neighbor. One man with a particularly well-developed conscience says that he has no use for poor quality sorts. He believes they damage the market and will eventually hurt the business, and anyhow he would not feel right to sell a man a barrel of Ben Davis if he knew his customer was planning to eat them. He, therefore, drops out of his list the above-mentioned variety along with the Gano and possibly the Baldwin and the Fallawater. He goes in for the Gravenstein, Ribston Pippin, Blenheim, King, Hubbardston, Northern Spy, Golden Russet and such varieties. His neighbor, with a little more of an eye for business, and a little less tender conscience, says, "If Ben Davis is what people want they ought to have it, and if I can make more money out of that variety, I am going to grow it." So he plants Ben Davis, Gano, Baldwin, Fallawater, and Stark. For these and other reasons it is difficult to say what are the best sorts for Nova Scotia or for any other section. Unless a comparatively long list is given one is going to leave out some sorts that are very popular with many growers.

At the Amherst winter fair in December last, the writer had the pleasure of assisting Mr. R. W. Starr to judge the fruit exhibit made by the three Maritime Provinces. A sweepstakes prize was offered for the best exhibit in the entire fruit show, and this was awarded to Mr. D. S. Collins, Port Williams, Kings Co., Nova Scotia.

We considered his the best collection of 10 sorts we ever saw staged. The varieties were well grown, well selected, well colored and probably the best 10 commercial varieties for the Province generally. The varieties shown were Gravenstein, Ribston, Blenheim, King, Spy, Stark, Baldwin, Golden, Russet, Nonpareil and Fallawater.

This presents the matter in a nut-shell so far as apples are concerned but there is a great deal that might be said in explanation, for while we think the above are "the best 10 commercial sorts for the Province generally" they nearly all have quite serious faults, and there are many other sorts (a half dozen at the very least) that come very close in point of

J. S. Scarf, of Woodstock, Ont.

The president of the Ontario Fruit Growers' Association, Mr. J. S. Scarf, has been prominent in horticultural affairs for many years. He was secretary of the Woodstock Horticultural Society, and by energetic work on its behalf made it one of the best in Ontario. He has also taken an active part in the municipal affairs of the city and was elected to the highest position in the gift of his fellow citizens for 1905.

popularity to some of those mentioned.

This secondary list would be—approximately in the order of their popularity—as follows: Wagener, which is the most popular sort for fillers or any method of close planting; Rhode Island Greening, which is coming more into favor again of late years, and which but for its unattractive color would be one of our best and most profitable sorts; Hubbardston, used on dry lands in place of Ribston which needs moisture; Ben Davis, very eagerly planted a few years ago but—fortunately for the fruit industry of the Province I believe—not nearly so generally set during the past few years, and Ontario, also popular as a filler.

There is also a third list including several of those mentioned in the two preceding lists that is planted largely in outlying parts of Nova Scotia where hardiness is a first requisite. This list would run about as follows: Wealthy, Wolfe River, Ribston, McIntosh, Baxter, Hurlbut, and Stark.

PLUMS

In the other fruits the selection is not nearly so well defined, because much less attention has been paid to their growth. Plums stand next to apples in importance though very much below them in that regard. The following list of 12 varieties includes the most popular and the most successful sorts, and I have tried to arrange them in order of value to the Province generally: Yellow Egg or Magnum Bonum, Grand Duke, Burbank, Bavay, Bradshaw, Washington, German Prince, Prince of Wales, Fellenberg, Lombard, Monarch, and Prince's Yellow Gage. I have omitted from this list the Damsons which really ought to be included, The French and Shropshire are probably the most commonly grown, though even these are not very plentiful, but coming late in the season they are very profitable to those who grow them.

Of the Japanese I have only included the Burbank for the reason that as yet it is the only one that merits a place among our most generally successful market plums. The Red June stands next. The Abundance bears poor crops too often; while the Wickson has been abandoned even in the Annapolis Valley

R. W. Shepherd, Como, Que.

The new president of the Pomological and Fruit Growers' Society of the Province of Quebec, first planted an orchard in that province in 1874, and for some years afterward planted out 200 to 300 trees annually. He now has 50 acres in apple orchard and one in plums. He has introduced many varieties of fruit in the province, and his experience has been of great value to many growers. Fruit can be sent from his farm 30 miles west of Montreal, and the same day be put on board steamship at Montreal.

as too tender. From our experience with the Japanese plums in the model orchards I should advise anyone outside of the Valley and a few favored sections elsewhere to plant very sparingly of them and then only of the Burbank or some other of the hardiest kinds.

PEARS

Pears follow plums in the order of importance, Bartlett and Clapp's Favorite being the two varieties most commonly grown and very generally successful. Of course, for market purposes the Bartlett stands far ahead of the Clapp, the tendency of the latter to rot at the core being a heavy handicap. Following these are a half dozen others quite generally grown but only in very limited numbers: Beurre, Clarigeau, Anjou, Louise Bonne de Jersey, Vermont Beauty Sheldon and Flemish Beauty. Seckel and Keiffer, the best and the poorest of pears, are not successful with us.

CHERRIES

In cherries practically nothing is done beyond supplying the home market and even that is very poorly supplied. At Bear River and Digby, sections that seem naturally adapted to cherries and where they spring up of themselves along the roadsides, some little commercial growing is attempted, but the product would not nearly supply the local markets if these were developed. The most satisfactory varieties are, among the sweet sorts, Black Tartarian, Gov. Wood, Windsor and Schmidt and, among the sour varieties Montmorency, English Morello, and Wragg. In our work with "model orchards," that is, in sections outside of the Annapolis Valley, we have practically given up planting anything but the sour sorts, finding the others too uncertain, though no doubt there are favored spots in most of our counties where the sweet varieties can be grown.

I shall leave out of consideration peaches, quinces, and apricots, for while I have known of cases where they have

John Donaldson, Port Williams, N.S.

In their new president, the members of the Nova Scotia Fruit Growers' Association have selected a man who is not only a practical grower, but who has been connected with the Association for a number of years. Mr. Donaldson is one of those who have long had faith in the possibilities of the fruit industry in Nova Scotia, and his work as a grower and as a member of the Association has been of great value to the province.

Gathering Knowledge in Fruit Growing—Pupils at Work in the Agricultural School Nursery, La Trappe, Oka, Ont.

About 75 pupils yearly follow the course in horticulture at this institution, the work being in charge of Prof. G. Reynaud, who may be seen standing to the left. The trees at the left are Wealthy, and at the right Ben Davis. The young nursery trees are Yellow Transparent and Pewaukee. A feature of the course is regular practical work in the orchard.

been successfully grown in the valley and in some other sections, and while in some instances individual peach trees have proved very profitable, they do not give as good returns as the fruits mentioned, nor is the question of varieties sufficiently well settled to warrant one in making any general recommendations.

HARDY PLUMS FOR QUEBEC

At the Quebec experiment station at Village des Aulnaies, in the far northern part of the Province, Mr. Auguste Dupuis has been testing varieties of plums since before 1860. The varieties that have given good crops at the station have been grouped according to time of maturity. Those which ripen August 10 to 15 are:—Jaune très hâtive, Jaune hâtive, Mirabelle precoce and Favorite hâtive. Varieties maturing August 18 to 25 are: Precoce de Tours, Reine Claude d'Oullins, Monsieur Jaune, and De Montfort. From September 1 to 15 the following sorts reach maturity: Early Red, Washington, Bradshaw, Moor's Arctic, Green Gage, Smith Orleans, Reine Claude d'Ecully, Reine Claude Impériale, Mirabelle petite, Péjonnières, Jefferson, Reine Claude Bryanton, Damson Blue, Reine Claude Montmorency, Yellow Meldowka (Russian), Imperial Gage, Island of Orléans Blue, Mirabelle parfumée Columbia, Mirabelle Grosse.

The following varieties mature September 15 to 30: Reine des Mirabelles, Duanès Purple, Lombard, Gros Damas de Septembre, Yellow Egg, Amaryllis, Shipper's Pride, Englebert, Reine Claude d'Althan, Reine Claude Diaphane, Reine Claude Razaimbault, Jones, Damas de Tours, Reine Claude Sagot.

During the last days of September to October 10, several varieties mature. These keep in good condition for market until November 1, but on account of hard frosts must be picked and packed in boxes about October 10. These are: Gueii (Glass Seedling), Quackenboss, Hudson River Purple, Grand Duke, Pond Seedling, Reine Claude de Bavay, St. Catherine, Datte verte, Prune d'Agen, Coe's Golden Drop, Tardive de Chambourcy, De Norbert.

In recommending for a small family garden, in the north, Mr. Dupuis mentions Jaune très hâtive (yellow), or Favorite hâtive, (blue) Bradshaw, Reine Claude Montmorency (greenish yellow), Washington (grafted on Green Gage is better than on Mirobolan), Blue Damson (on own roots), and Grand Duke. In addition to these, Coe's Golden Drop, a large fine and good plum, keeping till December if picked before frost, has given good returns.

APPLES FOR MANITOBA

Mr. A. P. Stevenson, of Nelson, Manitoba, who first planted fruit trees in the Prairie Province in 1874, has in his orchard individual hardy specimens from 500 trees consisting of 80 varieties of Russian apples planted in 1889. The varieties that have endured the western conditions are as follows: Summer—Blushed Calville, Charlamoff, Volga Anis, Repka Kislaga and Lowland Raspberry; fall—Anisette, Simbrisk No. 1, Kourisk Anis, Ukeraine, Anism and Gipsy Girl; late fall and winter—Hibernal, Cross, Wealthy, Peerless, Ostrekoff Glass, Heren and Antonofka. These varieties have given greatest satisfaction for the past ten years. The best of them were obtained from Dr. Saunders, of Ottawa.

New Varieties of Strawberries Tried in 1905

E. B. Stevenson, Ponsonby, Ont.

OVER two years ago my attention was directed to a new strawberry for which very high claims were made. I found it was growing in the trial grounds of Mr. Geo. J. Streater, of Ohio. A dozen plants were kindly sent me by the originator. I was told by an extensive grower of strawberries in Ohio who saw the new variety growing on the grounds of the originator, that the long sought for "Perfect" strawberry had arrived. This new berry was reported as creating quite a stir among berry-growers who had seen its fruit, as in plant, berry and fruit-stem it was, they said, perfect. I was anxious to see its fruit after hearing so much about it.

The Cardinal, the name of the new variety, Mr. Streater says, is the result of thirty years' experience in growing strawberries. During this period all the varieties, novelties, standard varieties, and thousands of seedlings were grown. For this reason I was very much pleased to receive plants of it from the originator. I planted them in a trial plot, beside the old standards, and I am pleased to report that the Cardinal has come up to what was claimed for it. It is a great berry. It was said by one grower to be *the greatest all purpose strawberry yet produced.* It certainly made a very good showing with

me during the past season. I believe it will take a first place as a market berry when it is well enough known. A. W. Clark, of Rhode Island, says that with him "it is all that the originator claimed for it, it is a wonderful berry." Mathew Crawford, of Ohio, says of it, "It is a most wonderful strawberry." It is said to be a seedling of Walfield, and Walfield is claimed to be a descendant of Wilson's Albany. The new strawberry would appear to be akin to the Wilson that held the lead for over twenty-five years as the best market strawberry.

The plant of the Cardinal is large and strong, very healthy, very bright glossy green foliage. The fruit is held up on tall strong fruit-stems. The plant is very productive of large berries of good quality, and firm enough to carry well.

"*Wonder*," a (*Perfect blossom*) originated by S. A. Sampsel, of Ohio, is also called "Sampsel's Wonder." It is a luxuriant grower. The plant is large, strong and healthy, a good runner, and very productive. The berry is large and conical, scarlet color and red seeds. The berry has a neck, and is of very good quality and well worth a trial. I was very much pleased with it. It has a long season, from mid season to late, and holds its size to the end.

Howard's No. 103 (Imperfect), the origin of 103 was grown from seed of a seedling of Crescent crossed with Clyde, by A. B. Howard, of Massachusetts. It has not been introduced. The plant is a good grower and makes a great many runners, and is very productive. The berry is conical and of good color and size. It gave a yield second to no named kind. It is a good early berry, one of the best we had. It is pistellate and that is one reason for its great productiveness.

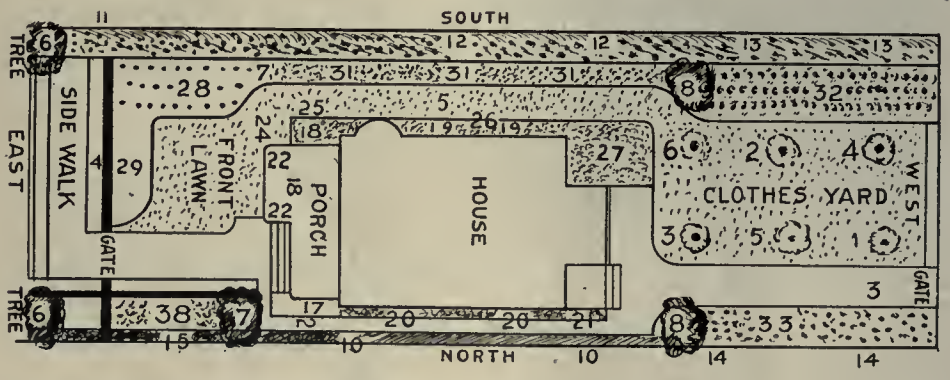
Early Hathaway (Perfect), originated by Hubachiand Hathaway, of Arkansas, and sent me two years ago. The plant is healthy and a good runner. The berry is conical, firm, of good color, red all through, acid, but of good quality, medium to large, very productive, a good early, well worth trying as an early market sort.

The foregoing four varieties took first place among the new kinds with me, and are equal if not superior to the old standards, but time will tell.

Perennials for the Town Lot

Roderick Cameron, Niagara Falls, South

MANY owners of a lot in a town or city are anxious to make the home surroundings more attractive but do not know how best to accomplish the task or what class of plants to use. In most cases perennials can be used to best advantage. The following specimens are most suitable for the average-sized lot, about 50x120 feet, giving a front yard 50x25 feet. By referring to the diagram here published an idea can be gained as to the proposed arrangement. The space available for gardening purposes being so small, care must be taken to utilize every inch.



The paths are the first consideration. They must be convenient and spacious enough, particularly to the front door, for four persons to pass abreast without crowding each other on to the grass. It is best to adopt straight lines since the single lot does not permit of crooked ones without cutting up the lawn too much; in other words, we must make the best of the space at our disposal. On a larger space, say two lots, irregular lines would be better.

Lots are generally surrounded by a fence, and if one is used it is best to cover it with chicken-netting, which costs but a few cents a yard. It is then ready to plant vines against, which will cling to the netting by their tendrils, saving the time and trouble of tying. A fence covered with suitable vines, kept clean and trimmed properly, becomes more attractive and beautiful year by year. If the front fence is a wall, cut holes through it near the bottom and put in four or six inch tiles. Then close round the tile as before and plant inside the wall with ampelopsis. They will find their way through the tile pipe and cover the outside of the wall, at the same time covering the inside. In this way the danger of destruction of the vines by public works on the street is removed.

On the north side, from the front to the back door, plant Hall's Japan Honeysuckle, and trim it as you would a hedge each year, preferably in the spring. It is usually the lack of this trimming that makes these vines look so bare and scrubby. Trim them and see what a pleasure will be derived, not only in foliage, but also in bloom, and almost throughout the entire summer and fall. At 12×12 plant the tall Nasturtiums; at 11 plant Clematis paniculata and one or two Clematis Jackmani; at 13–13 set the different varieties of Rambler Roses and Queen of the Prairie, and do not forget to trim them now and again when needed, and at 14–14 plant Trumpet Creeper and the rose Acacia alternately. They must be kept close to the fence and trimmed occasionally or tied to the fence. At 16 may be used a cedar hedge as a screen to hide the alley at the back of the lot.

The lines for the house at 17 should be Chinese Wisteria and the golden-leaved Honeysuckle, or Louicera reticulata. The Wisteria climbs up and over the front veranda, while the Honeysuckle covers the bare stem of the Wisteria. At 18–18 plant Akebia quinata and Clematis paniculata. At 19–19 and 20–20 plant Ampelopsis veitchii, or Boston Ivy, to cover the wall. At 21 use Matrimony Vine or Staff Vine, Lycium Chinensis and Celastrus scandens. To the left of the front steps is a flower border three feet wide; the vines, 18, are planted at the back: thefr ont row, 24, may be sown with Mignonette or Sweet Alyssum, or Madam Saleroi Geranium, or Golden Bedder Coleus may be used. Behind them 22–22, plant mixed Geraniums or Scarlet Salvia. At 25 may be planted dwarf Nasturtiums; at 26 pink Geraniums thinly, and among them in the open spaces Gladioli. At 27 dwarf Cannas bordered with variegated Stevias, Zinnias, French Marigolds or Coleus look well. Space 28 can be planted with roses such as General Jackminot, in the back row; the second row, Mrs. John Laing, and the front row mixed summer bloomers that must be laid down during winter. Throw a spadeful or two of soil close up to one side of the bushes to act as a pillow, and bend the branches over it. This will prevent a sharp bend in the branches, and keep them from breaking. Over the whole place a good-sized sod, grass-side under, to protect the plants over

No. 1

No. 2

No. 3

FREAKS AMONG THE TRILLIUMS

Dr. D. G. Storms, Hamilton, Ont.

During the last three or four years, in my rambles through the woods in spring, I have chanced upon a few specimens of trilliums such as the above, having the petals more or less splashed with green. In the spring of 1905, in a secluded ravine near Hamilton, my wife found the large cluster which had a dozen or more blooms, varying from pure green to merely a slender green strip down the midrib. In the same place, but possibly fifty or seventy-five feet away, the left hand bloom in No. 1 was found, and two or three hundred yards away, and on high, dry ground, that in No. 3 was discovered.

In the ordinary trillium the whorl of green leaves sits down upon the flower stalk, that is, they have no stems. You will see, in the left hand bloom of No. 1, the leaves have stems about as long as the leaves themselves. In No. 2 the stems were six or seven inches long and attached below the ground. In No. 3 the green leaves were absent. Another strange feature with No. 3 was that the bloom was double. This can be accounted for by each whorl being moved up one place, so that the whorl of green leaves form what looked to be the sepals, the sepals forming the petals and the petals proper forming the additional whorl of petals. These latter were white with a green stripe.

We carefully took up the cluster in No. 2 with all the earth about the roots, and planted it in our garden at home, where it was admired by many. It seemed to be perfectly at home. We are looking for the spring to see if it will appear again as we found it.

These rare specimens are found frequently near Galt, and in several places about Hamilton. We want to know why, and we invite opinions from those readers of "The Horticulturist" who have studied these beautiful and interesting plants.

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winter. Among the roses may be planted Gladioli, Violas or Pansies to keep the plot bright.

At 2–2 may be used a Cut-leaved Weeping Birch and a Halesia Uraptera, or Snowberry tree, and next to each in their shade, plant on one side one or two Golden Bell bushes, Forsythea suspensa, and on the other Viburnum plicatum. The street trees, 1–1, may be elms or maples. Both are suitable for the purpose. At 29 plant Deutzia gracilis, Deutzia Lemoinei and Yucca filiamentosa, and border with Sweet William mixed. At 30 may be planted Tritoma Pfritzeni, Perennial Phlox, and Campanula salicifolia in twos and threes.

At 31–31–31 may be used as an edging Armeria, Maritima splendens, bright rosy pink flowers, and Alba, white. They may be mixed or planted in clumps of three or four. The rest of this border should be planted in clumps with no regard to order. The following plants will not rob one another since they are of about equal constitution. The best are as follows: Arabis Alpina, single white flowers, Var rosea, has pink flowers, and variety flore pleno has double white flowers, and begins to bloom after the single is done, thus prolonging the season of bloom; Dicentra eximia, a purple dwarf Bleeding Heart, blooming almost continously during summer and fall; Iberis sempervirens, Evergreen, Candytuft with white flowers, Alyssum saxatile compactum, also called Basket of Gold, a foot high, and producing golden flowers; Authericum liliastrum, two feet high, pure white lily-white flowers; Montbretia in half-a-dozen varieties, growing two to three feet high, and resembling small Gladioli. Among these plants here and there may be planted clumps of Pansies or Violas, also called Tufted Pansies.

Plot 32 may be planted in a similar manner to 31, but more variety and larger plants should be used. The front row may be of Scotch Pinks in variety, and Tufted Pansies or Campanula carpatica. The rest of the plot may be planted in clumps with the following, keeping the tallest towards the back, Lythrum calicaria, or Spiked Loose-Strife, four feet high, purplish flowers in long wand-like spikes; Lysimachia clethroides, two feet high, and white flowers, Achillea ptarmica, the pearl, two feet, double white daisy-like flowers, Mertensia virginica, Virginian Cowslip, 15 inches, blue flowers, and Coriopsis grandiflora, two feet, yellow flowers, are all good. Delhpinium in variety may be added if there is room. They can be had in many shades of color, and grow four to six feet high.

Plot 33 I would advise planting in the same way as 32, but with different specimens to give variety to the border, and to have cut flowers for home use. The front row should be planted with Polyanthus, Cowslips and Primroses. Here and there among them may be planted Lychnis plenissima, Semper florens, growing about a foot high, and producing rose-pink flowers from spring to fall. Myosotis palustris makes a good subject for the front row; it is continuously in bloom from spring to fall. This Forget-me-not is also forced during winter by the florists. The remainder of this border may be planted in clumps with the following: Monarda didyma splendens, three feet high, scarlet flowers; Platycodon grandiflorum, two feet high, one blue and one white, and Saxifragas umbrosa, London Pride, or None so Pretty, a low-growing, spreading sort, that throws up stems a foot high with pink flowers.

A plant of each of the following gives much pleasure to the owner: Spiræa Chinensis, pink flowers, three feet high; S. filipendula, florepleno, double white flowered, fifteen inches high; S. Japonica aurea reticulata, 15 inches high, with leaves beautifully veined with gold; Pentatemon barbatus Torreyi, 2 feet high, producing scarlet flowers on long stems from the base of the plant all summer, and good for cut flowers; Chrysanthemum maximum superbum, suitable for out-of-the-way corners at the back of the border, blooming all

summer; Clematis Davidiana, three feet high, and producing light blue flowers in the axils of the leaves; Campanula persicifolia gigantea Moerheimi, this is one of the best herbaceous plants grown, double white flowers on stems three feet high; Anemone Japonica in variety, to bloom when other plants are done, three feet high; Helianthus multiflorus florepleno, four feet, double yellow flowers, and Helianthus sparsifolius, six to eight feet high, with large golden-yellow single flowers. These varieties are choice for cutting, and will make a fine display throughout the summer if cared for.

The clothes-yard posts should be red cedar. Place wire or netting on them, and plant beside 1, 2, and 3; the pink Everlasting Pea, Lathyrus latifolius, and on 4, 5 and 6 Lathyrus latifolius alba, they will cover the posts and produce excellent cut flowers for the table.

The walk from the gate to the front door is six feet wide and made of concrete. No. 2 is a two-foot path from the front to the kitchen door, also made of concrete. No. 3 is a four-foot concrete walk from the alley to the kitchen door. No. 4 is a gravel space in front of the cellar entrance. No. 5 is a four-foot wide grass path running from the clothes-yard to the front lawn. At No. 8-8, two small trees, one cercis Canadensis or Judas Tree, the other on the south side, Cercidiphyllum Japonicum, or Catsura Tree of Japan, are planted.

Pleasing Floral Effects for the Table

NO matter how dainty the meal, or how elaborate the diplsay of cutlery, glassware and china, the table is not complete without some form of plant life. Nothing is more pleasing than a few fragrant flowers artistically arranged. Even a small bouquet of some common flowers in a vase in the centre of the table makes a pleasing effect. In the summer no difficulty is experienced in getting a suitable supply for every occasion, but when winter comes the supply is somewhat limited and the cost considerably increased. It is at this season, however, that floral decorations on the table are most enjoyed and, for this reason, when friends are entertained, the expenditure of a few dollars for flowers for the table affords pleasure to all. These flowers may be arranged by one's self.

Persons who visited the recent Horticultural Exhibition in Massey Hall, Toronto, received an object-lesson in artistic table decorations, if they but studied the different arrangements on the various tables in the competition. The table that won first prize was decked with orchids, lily of the valley and asparagus fern. Richmond roses, lily of the valley, and maidenhair ferns were on the second prize table. On the third prize table were Canadian Queen roses, violets and asparagus fern. In every case the display was more elaborate than can be expected in the average dining-room, but the different arrangements offered suggestions as to what might be accomplished with fewer and less costly specimens.

Various plants can be used to advantage, but those with a pleasing fragrance should be chosen. In an interview with the CANADIAN HORTICULTURIST, Mr. J. S. Simmons, of Toronto, whose table won third prize in the competition said: "There are many flowers that produce a pleasing effect on the dining-room table in winter. Violets with yellow daffodils or yellow tulips are desirable. Roses are frequently used, and when combined with other suitable plants are among the best for decorating tables. Sunset roses and violets make a very pleasing effect. Meteor or Bridesmaid roses with lily of the valley can be arranged to give a fine display. Many people use the pink carnation, Enchantress, and violets to excellent effect. A centrepiece of Enchantress carnations and corner bouquets of lily of the valley are common table decorations.

"For the greatest show and to present a rich appearance the flowers are placed in a cut glass vase on a mirror base. A more natural effect is produced by placing a few flowers on the mirror loosely as if they had fallen from the centre bouquet. Other arrangements for display are made by having a centrepiece in basket form, or with a birch bark hamper. If the former is used, the willow basket can be screened with asparagus fern. In using daffodils and violets with the willow basket the appearance can be made much more attractive by forming ribbons of asparagus fern, and having them placed carelessly from the basket. All signs of stiff or set arrangement should be removed. In using daffodils it is common to form fans on the corners of the table. The flowers should be tied with ribbon to match. With carnations and lily of the valley in the basket a pleasing effect can be produced by forming a three-looped bow and placing a vase in each loop. The loose ends of the ribbon arrangement can be allowed to run to a prominent part of the table.

"When the birch bark hamper is used in forming the centrepiece, a more pleasing effect is made by having small birch bags on the corners of the table.

The prize-winning decorated table exhibited by Mr. J. S. Simmons at the Ontario Horticultural Exhibition.

LOOSE ARRANGEMENT BEST

"As a rule the flowers should be arranged loosely. Care should be taken not to obstruct the view across the table. It is not advisable to have the flowers stand up too high or to have them arranged compactly. Ribbons

and dry goods are objectionable, and should be largely dispensed with.

"In many cases a corsage is left for each lady and a boutonnière for each gentleman. When the table is decked with carnations and lily of the valley, the lady should have a pink carnation and some valley tied with white cord, while the gentleman receives only the valley. When roses and violets, or roses and valley are used, a rose is given to the lady and some violets or some valley to the gentleman."

If cut flowers cannot be secured, a nice pot plant of low growing habit is an excellent substitute. The dwarf ferns are admired by many. A bushy specimen of geranium, or impatieus, or any plant that can be induced to bloom in winter, is preferred by others. Most of the common flowering house plants can be used for this purpose if the bloom is kept off during the late fall, and extra care given them.

An Amateur's Greenhouse in February

A. Alexander, Hamilton, Ont.

THE prevailing color of the January house was white, from the predominance of Roman Hyacinths, Paper-white Narcissus and white Primulas—these are now in the background, and pink and yellow reign supreme. The pink from a large number of pink or rose-colored Begonias, and the yellow from scores of Daffodils, which, though bought for Von Sion from two different firms, have turned out to be "Trumpet-Major"—not one Von Sion bloom in the 150 bulbs! I am curious to find out if the experience of my brother-amateurs in this matter coincides with mine. I do not regret it, for they are very beautiful, and I am satisfied.

The following is a partial list of plants now in flower in addition to those mentioned:—

Poinsettia pulcherrima, Bouganvillea, Azalea, Begonias, Cyclamen, Freezias, Abutilon, Lantana, Geraniums, Dutch Hyacinths, etc.

Not alone for flowers is the Amateur's Greenhouse useful for keeping up a constant succession of beauty throughout the dreary months, but also in preparing for the coming work out of doors in the garden, hence this month of February should see sundry boxes and pots containing seeds and cuttings standing about in, or on, the sand of the propagating bed. Neither should the kitchen garden department be neglected, for if a few tomato seeds are put in, and potted on, by the middle of May you will have plants with fruit set, ready to plant out.

Let me also recommend that now is a good time to put in sand, or moss, a few tuberous-rooted Begonia tubers just to start them off before potting. They are most desirable for the amateur's house; they are easily handled and give great satisfaction. I get a shallow box, two or three inches deep is enough, put in an inch of moist sand, lay the tubers on this and fill in between with the sand, just leaving the tops visible, but be sure it is the tops. Cover with a piece of glass to prevent too much evaporation, and shade with a piece of paper. As soon as the first signs of life appear remove the glass and, when the sprouts are about an inch long, put each in a suitable pot in good soil, and in about two or three months you will be delighted with the resulting beauty.

Cypripedium Insignis as Grown in Mr. Alexander's Greenhouse.

There are also many hardy perennials that may be started this month, and which will flower the first year. As an example, about this time last year I sowed in a shallow box in the greenhouse a few seeds of perennial Delphinium or Larkspur, which planted out in June, about 100 plants. In September I had 70 of them in bloom—some of them quite new and valuable. Some of the spikes of bloom were three feet in length, of every shade of blue, from indigo to nearly white. With a small greenhouse and some bottom heat, all the annuals and other plants you need for outside may be raised.

Another Corner of an Amateur's Greenhouse in February

Flowers are alway a source of joy, whether we pluck them from our own little garden or whether we order them ready made from the florist.—Mrs. W. J. McLenahan, Appleby.

Do not be a back number. Improve your surroundings and keep up with the procession. Flowers will grow where weeds and thistles will grow.—N. S. Dunlop, Montreal, Que.

Winter Treatment of Bulbs and Tubers

Wm. Hunt, Guelph, Ont.

AMATEUR flower growers frequently make a mistake, when wintering their bulbs, in the care they give the Amaryllis.

These popular and gorgeous flowering bulbs should be divided into two classes, the herbaceous and the evergreen. The mistake is often made of treating these two distinct types in exactly the same way during the resting period. This sometimes happens because the characteristics of these two types are not understood. The herbaceous type of the amaryllis is very easy to detect. As soon as these have flowered and the flowers drop the foliage begins to show signs of decay This is natural in the herbaceous type and is a sure sign of the natural and severe rest required by these bulbs. The proper flowering season of both the evergreen and herbaceous varieties is during the summer months. As soon as the herbaceous variety is out of flower and the foliage begins to decay, give the bulbs less water. When the foliage has died down give only sufficient water to keep the soil moist around the bulb. Remove them to a cool, shady position out of doors, bringing them in before frosts, and put them in a cool cellar or window in a temperature of 45 degrees. They can be kept here quite dry until February or March, when they can be brought out into a warm window, watered, and started into growth. Repot the bulbs if necessary at this time. A good top dressing of soil is, however, often to be preferred to re-potting them.

With the evergreen type of these plants no sign of decay will likely be seen in the foliage after flowering, as these do not require so decided a period of rest. The evergreen varieties can be kept in a cool window all winter, giving them less water, however, than during the summer. A temperature of 40 to 50 degrees will suit them in winter. The Vallota purpurea or Scarborough Lily is closely allied to the different varieties of evergreen amaryllis, and requires much the same treatment in winter.

Gloxinia bulbs should be gradually dried off after flowering as soon as the leaves show signs of decay. Very little water should be given them when once dormant. Light waterings may be necessary at times during the winter, so as to keep the soil from getting dust dry. This latter condition is too severe, and results in either dry rot or shrivelling of the bulb. A temperature of 45 to 50 degrees will suit them in winter.

ACHIMENES

These pretty little flowering plants make very desirable window plants for summer flowering when properly managed. If the small bulb-like tubers are started in April or May in pots in a hot-bed or in the window they give good results. They succeed best in hanging pots or baskets. A light compost of equal parts of potting soil, leaf soil, and fine sand will suit them, with plenty of drainage. Avoid giving too much water in the earlier stages of growth. A summer temperature and partial shade suits them best; sprinkle the foliage very seldom. When out of flower treat as recommended for the gloxinia, with the exception that achimenes will endure a drier condition of the soil when dormant than the gloxinia will.

Light soil, good drainage, h at and partial shade, with careful watering in the early stages of growth, are the essential points in the culture of both of these plants. I have been tempted to take this opportunity of giving a few cultural hints on achimenes from the fact that their usefulness as summer flowering window plants is not generally known by plant lovers, although they are favorites with many amateurs who often have great success with them.

AMORPHOPHALLUS OR SNAKE PLANT

Not a very attractive name, but the growth of the plant is very pretty in summer. Their oddly formed leaves, together with the green and almost white blotches on its foliage, that has given it the name of the Snake Plant, and its easy culture when properly treated makes it a very attractive plant for an east or north window in summer, or even out of doors in July or August in a shady position. The treatment of the bulbs when dormant should be about the same as for the gloxinia and achimene. The cultural notes given for these last named plants will also suit the Snake Plant, except that the soil need not be quite as light in its nature. This plant usually flowers when the large bulbs are dormant. The flower should be destroyed as its odor is very disagreeable.

TUBEROUS ROOTED BEGONIAS

The tubers of these should be kept dry during the winter when once the foliage has entirely dried off. A temperature of 40 to 45 degrees will suit these tubers in winter time. I prefer keeping all of the bulbs and tubers I have been speaking of in the soil they have grown in, and in the pots as well, without being disturbed while dormant. Dry sand or earth can be used to pack them in, but from experience I have had the best results from keeping them in the pots undisturbed. It is the most natural method to treat them, as the pots can be stood away in a cool cellar or room very easily when the roots are dormant.

Grow Flowers for the Churches

A. K. Goodman, Cayuga, Ont.

IN the smaller towns it would be a good thing to plant gardens, especially for the purpose of supplying cut flowers for the decoration of the churches. Set these gardens apart from the formal beds and interest the children. Have them make the weekly cuttings

Gathering Flowers for the Church

and decorate the chancel. After the morning and evening services, have the flowers distributed among the sick in the locality.

This would have a wholesome effect in many ways, and be particularly a wise training for the young. It might even revive interest among the older members of society in church work,

Mr. Goodman's Garden where Flowers are Grown for Church Decoration

and check any tendency to atheism, that foul, unnatural vice, foe to all the dignity and consolation of mankind.

Pleasing results for this purpose may be had from asters and gladioli planted in masses. If the former are tried, note that asters feed near the surface of the ground and require the best of soil, in the open, good drainage, plenty of water, with a mulch of well-rotted manure just before or as the buds form.

For those horticulturists who have well-balanced minds and wish to have a real garden, a combination of floral effects is necessary. All are equally important in the making of a garden that will be interesting and useful, and if properly combined they will produce an effect at once striking, beautiful and artistic.

The Lawn—An Important Part of the Home Surroundings

A. H. Ewing, Woodstock, Ont.

To have a nice even lawn the ground must first be properly prepared. This cannot be attained simply by levelling the hills into the hollows. If this is done, the places where the hills were will be poor soil and the grass when grown will look patchy and will wither much more quickly in dry weather than the grass where the hollows were and where there is a good depth of top soil. I have, in my mind's eye, a lawn where twenty years or so ago there were flower beds and cinder paths. These were dug and covered with a light coat of soil. To this day the pattern of those beds and paths is plainly visible, especially in dry weather.

A Lovely Home Surrounded by Lawns

The west lawn at "Altadore," Mr. H. A. Little's residence, at Woodstock. One of Canada's handsome "country" residences.

The land should be ploughed or dug and levelled to the desired contour, ploughed or dug again, and well worked to an even depth, and give a good coat of old, well-rotted manure, especially on the poor spots. This should be well worked in. It is preferable to do this in the fall so that the ground may settle and be again levelled as early as possible in the spring and the seed sown at once. Before sowing go over the land with a rake and pull off all stones and lumps that cannot be broken. At the same time make the surface perfectly even.

Procure the best lawn grass seed from a reputable seedsman—be particular about this as it will save future trouble with weeds—and sow broadcast on some very still day. Early morning is generally the best time. Sow it thick, too, so that you can see it on the ground when you are finished without your spectacles. Forty or fifty pounds to an acre is said to be the right quantity, but that is rather indefinite to most people. Some rake the seed in, but I prefer leaving it alone. The best plan is not to touch the lawn the first time until the grass is long enough to be cut with a scythe, unless the mowing machine is very sharp and in good order. It is better not to cut it until it is strong and has a good hold of the ground. After the first cutting, the grass plants (and clover, too, if you have sown it) will soon cover the ground and stand cutting whenever needed. The machine should not be set to cut too low the first year.

There are sure to be some weeds, but many of them will die after being cut off with the machine a few times. Dandelions, plaintain and ox-eye daisies can not be killed so easily. These must be pulled or spudded.

A good lawn can be obtained much more quickly if clean sod can be secured at a reasonable rate from a nearby pasture. Sodding can be done almost any season of the year (except winter) especially where plenty of water is at hand. Spring and early fall are the best times. The same preparation of the ground is necessary as for seeding. In cities or places where the plot is likely to be tramped, sodding is much the better way to start a lawn. Seeding is a precarious proceeding and not advisable.

There are many points in the making of a lawn that the uninitiated might want to know. Every place has its own particular points, and I propose, if the editor thinks I know enough about it, to write more on the subject in the near future. The keeping up of old lawns will be treated. In the meantime I shall be pleased to receive questions from anyone proposing to make a lawn and to embody the replies in my next contributions.

A Sweep of Lawn Like This Adds a Homelike Appearance

This illustration shows the south lawn of the residence of H. A. Little, Esq., of Woodstock, formerly owned by the late Hon. James Sutherland.

Fertilizers for Vegetable Growers*

Prof. R. Harcourt, O.A.C., Guelph, Ont.

UNTIL comparatively recently the fundamental principles underlying the use of fertilizers was not understood. Some of the questions which had to be solved first were: What is the food of plants? and, What is the source of that food? Further, in order that fertilizers be intelligently and economically used, it is essential that some definite knowlegde be gained regarding the food requirements of different plants and the power which they possess of appropriating these food substances. It is also necessary that something be known regarding the quantity of food materials that are available to the plant, and the particular part each food constituent plays in plant development. These, together with an intimate understanding of the composition and availability of the constituents of a fertilizer, and many other points, must be, at least partially, understood before fertilizers can be intelligently applied.

Given that the soil is in fair condition and that the cultivation will be thorough, there are certain fundamental facts concerning the needs of the soil and crops and the nature of the fertilizers that are not difficult to understand, and attention to which will greatly increase the likelihood of success.

All soils will not contain or retain plant food to the same extent. As a rule, clay soils hold that which they receive better than sands, and thus do not suffer so much from the leaching action of water; on the other hand, the sands may be more liable to lose plant food in the drainage water, but they also give up that which they have to plants quicker than the heavy soils. In both classes of soils and all the intermediate types, an abundance of humus is essential.

Regarding the plants themselves they differ in the range of root, period of growth, purposes for which they are grown, and in their power of attacking insoluble constituents of the soil with which they may come in contact. As a general rule, the greater the depth and range of root a plant has, the less need there is of supplying the ash constituents for that crop, as it can gather its food over a very wide area. The length of the growing period also has a very marked influence on the nature of the fertilizer which a plant will require. A crop, such as barley, requires its food in a form more readily available than oats, for its period of growth is shorter and it gathers its food almost entirely from the surface soil.

Such crops as the legumes have comparatively little difficulty gathering all the nitrogen they need, because, through the aid of certain minute organisms present in most solids, the immense supply of nitrogen in the atmosphere is available to them; but, on the other hand, they have difficulty in getting the amount of potash they require. Root crops, such as mangolds, turnips, carrots and beets cannot make ready use of the insoluble mineral constituents of the soil. Hence, in order to insure full crops, they must be supplied with available food in which phosphates should predominate for turnips and nitrogen for mangolds and carrots.

Another group of plants is distinguished as a class not so much because of their peculiar habit of growth as because of the objects of their growth. This class includes lettuce, beets, asparagus, celery, radishes, in fact all plants that are marketed in immature form. One of the most important points in raising these is to secure rapidity of growth, and thus to insure high quality, which is measured largely by their succulence. In order that this may be accomplished they must be supplied with an abundance of available plant food, and since nitrogen is the one element that more than any other encourages and stimulates leaf and stem growth, its use is especially beneficial to all of these crops. They must not lack this element in any of their growth, though, of course, a sufficiency of the ash constituents must be supplied in order that the nitrogen may be properly utilized. Because of their high commercial value the quantity of plant food applied may be greatly in excess of that for any other group of plants.

It is impossible to give general information concerning the use of fertilizers that will apply well under all circumstances. On soil in good condition, it is safe to apply good dressing of readily available nitrogen to all crops that produce large leaf and stem growth and are harvested in the immature state. For the legumes, which can gather their own nitrogen, and potatoes, which use up large amounts of potash, potassic manures can safely be recommended, and for roots, and particularly for turnips, phosphoric acid is the dominant fertilizer. It is not meant that only those particular constituents should be applied for the other fertilizer constituents are, up to a certain point, just as important.

If the soil is in a high state of cultivation or has been manured with natural products, as farmyard manure, they may be used singly to force a maximum growth of the crops. For worn-out soils, possibly the best practice would be to apply with what farmyard manures may be available, a liberal supply of mineral constituents in the cheaper forms, such as ground bone, tankage from pork packing establishments, ground phosphates, and basic phosphate for phosphoric acid, and the crude potash salts, not forgetting wood ashes for potash. The phosphoric acid and potash forms fixed compounds in the soil, and are, therefore, not likely to be leached out, provided the land is continuously cropped. Nitrogen should be applied chiefly as nitrate of soda, because in this form it is immediately useful, and thus may be applied in fractional amounts, and at such times as to best meet the needs of the plant at the different stages of growth, with a reasonable certainty of a maximum use by the plants.

In conclusion, it cannot too strongly be urged that, while fertilizers intelligently used may be a source of profit to the fruit grower, and especially to the vegetable grower, carelessly used, they may be a source of great loss. They can never take the place of cultivation; in fact, it is only in conjunction with the most thorough cultivation that they will prove profitable.

*Extract from a paper read at the first annual convention of the Ontario Vegetable Growers' Association, held last November at the time of the Ontario Horticultural Exhibition.

Forcing Vegetables

W. T. Macoun, Ottawa, Ont.

In THE HORTICULTURIST last winter Mr. S. Ward Kennedy, of Leamington, had an article on Early Vegetables. Why not go further and bring vegetables to maturity under glass in winter? I am interested in this question, but only as an amateur, and I trust I am not asking an absurd question. Given a properly constructed, ventilated and heated greenhouse, proper soil, fertilizers and attention, why could our growers not fill with their produce the stalls of our shops that in winter are supplied with foreign vegetables?—M. W., Hamilton.

The principal reason why Canadians do not grow winter vegetables to supply the home market is that the winters are so severe that the cost of heating prevents successful competition with vegetables produced in the south. It is gratifying to know, however, that tomatoes are being more largely grown in Canada in winter, and, we believe, with fair profit. Lettuce, radish, and some cucumbers are also grown. In southern Ontario, where the winters are comparatively mild, the growing of vegetables in winter is receiving considerable attention.

F. F. Reeves, Humber Bay.

The Toronto branch of the Ontario Vegetable Growers' Association is the strongest branch of the provincial organization in the province. It has over 100 paid members. Monthly meetings are held at which addresses are given by local vegetable growers. One of the secrets of the success of this organization lies in the hard work that has been done by its efficient secretary, Mr Reeves, who has been a successful vegetable grower for a number of years. Mr. Reeves was in charge of the vegetable exhibit at the Ontario Horticultural Exhibition and is a director of the Ontario Vegetable Growers' Association.

Celery Blight

What is the cause of celery blight, and what is the best remedy? What experiments have been conducted to find the cause?—F. F. Reeves, Humber Bay, Ont.

Prof. F. C. Sears, Truro, N.S.: There are two common diseases of celery that are known as "celery blight." As one appears much earlier than the other they have been distinguished as the early and the late blights. Both are fungous diseases and both begin as spots upon the leaves, but in the early the spots are at first grayish-green and later brown and ashen; while in the late blight the spots are of a tawny color.

The remedies that have proved most satisfactory are: growing celery in moist ground and, where feasible, shading it; practising rotation so that the disease may not be carried over in old celery plants and attack the new crop; destroying all refuse, plants and leaves, and spraying with Bordeaux mixture in the early part of the season, and later, as the plants near maturity, with copper carbonate solution (copper carbonate six ounces, ammonia water two pints, water 45 gallons). It is also recommended to dip the tops of plants on setting them out into the copper carbonate solution. Extensive experiments have been made at the following experiment stations: Ithaca, New York; New Brunswick, New Jersey; New Haven, Connecticut, and U.S. Department of Agriculture, Washington, D.C.

ANOTHER ANSWER

Prof. L. R. Taft, Michigan: Celery blight is caused by a fungous disease that is especially troublesome when the growth of the plants has been checked either by lack or excess of moisture. Its effects can be lessened by using land that is naturally moist but well drained and that is well supplied with plant food. The use of mineral fertilizers rich in phosphoric acid and potash seems to reduce the tendency to the attack of this disease. When the disease has been troublesome it is a good plan to use the land for some other crop for a year or two. Spraying with Bordeaux mixture or weak copper sulphate solution will reduce the injury. Sometimes the disease appears on a few plants and it will be well to remove and destroy the infected leaves. It will also be well when harvesting celery to carefully gather and destroy all the leaves.

ONLY ONE BLIGHT

Prof. S. F. Edwards, Guelph, Ont.: The term celery blight is commonly applied to several diseases of celery, but accurately speaking there is only one that should be called blight. The cause of this trouble is a fungus, Cercospora apii, Fr., which may appear at almost any time during the season, attacking first the lower leaves, and producing irregular brownish blotches that later turn yellow. Probably the most beneficial treatment is spraying with Bordeaux mixture, twice on the young seedlings, and again a few weeks after transplanting.

Another disease of celery that is sometimes called blight, and which is probably of bacterial origin, is under investigation in this laboratory. In connection with this work, specimens of a few leaves of diseased celery, accompanied with data as to the extent of the trouble, percentage of loss, and varieties of celery most affected, would be gladly received.

Growing Cauliflower

The question of growing cauliflower was ably discussed at the meeting of the Toronto branch of the Vegetable Growers' Association on January 6, by Mr. Jno. McKay, the cauliflower king, of Doncaster. It was stated definitely that for success in growing this crop a suitable soil must be provided. As a rule success cannot be had on land that is suitable for growing celery. A sandy loam is the best soil and much better than heavier soil. A liberal supply of manure must be added and frequent cultivation is required throughout the season. It is an expensive crop to grow, as the plants are delicate and will not stand extremes of heat or cold, and there are numerous insect pests to combat.

For success the best seed is needed. These should be started about June 1. Mr. McKay used to sow the seeds before May 15, but he found that the white maggot usually did much damage when the plants were started early. He advised setting out a few plants about July 1, and the main crop July 15, and holding a few thousand as late as July 20. The best returns were obtained by setting the plants in rows two and a half feet apart, and the plants two feet apart in the row with those of one row opposite the spaces in the adjoining rows. All the plants were watered as they were set out, two men setting while the third put on the water. It is well to set the plants out during showery weather but when three or four acres are to be planted suitable weather cannot be awaited. Plants with two to two and a half inch stems were claimed to be better than longer specimens.

Frequent cultivation with the horse and constant use of the hoe to keep the weeds down results in rapid growth, and when the head has developed to the size of a hen egg or duck egg the leaves should be pulled together over the top and tied with a string to prevent the sun from burning it.

Mr. McKay was asked what his experience with commercial fertilizers had been, and he remarked that he had used different fertilizers both in the greenhouse and for field crops. In some cases excellent results followed and again, under similar conditions, no improvement in the crop was noticed. The blight could not be kept down no matter how much fertilizer was used. Mr. Shuter said that the fertilizers tended to make the plants stronger and more able to resist disease and insect attacks.

When asked what variety gave best results Mr. McKay said that Erfurt seed procured from one of the Toronto seed houses was most satisfactory on his soil. He started the seed on a knoll and secured more sturdy plants there than when the seed was planted on lower ground.

The Burdock

Will a burdock bear seed the first year, or how many years will the same root bear seed? —Subscriber, Clinton.

The burdock is generally considered a biennial (that is, it takes two years to reproduce itself), but in rare conditions it may be found as an annual. The biennial burdock starts from seed but does not flower the first season. The following spring it resumes growth and produces seed, after which the whole plant dies. The same root bears seed only once.

Plants should be treated more as human beings who eat and drink and breathe. Weak plants are usually caused by high feeding, or the addition of something that the plant doesn't like.
E. F. Collins, Toronto.

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UNRELIABLE NURSERIES

A considerable amount of business is done in Canada each year by unreliable nursery firms from across the line. Eagerness on the part of the grower to save a few cents, and foresight on the part of the managers of these nurseries in issuing a bright catalogue full of tempting offers, result in many farmers and fruit growers being bitten. Trees are catalogued at rates slightly lower than the Canadian nurserymen offer similar stock, but the short-sighted grower forgets that duty and freight have to be paid.

The Indianapolis Nursery Company and others of a similar stamp flood the fruit growing districts of Canada with these catalogues every season. The stock that they offer is generally found to be a surplus that they cannot sell in their regular territory. In many cases it is not true to name as the orders are filled from whatever sorts are most plentiful. More than this these firms specify that money must accompany the order, and cases are known in which the money was retained and no stock sent.

The fact, also, that these goods are grown in the south is worthy of consideration. Such stock is naturally of a softer and more pithy growth than our Canadian trees. They are not suited to Canadian culture, and the first severe winter kills the trees or causes them to become black-hearted. Many of these trees are grown in sections that are the very hotbeds of the dreaded San Jose scale. Every case in which this scale has been found in Canada has been traced to stock imported from the United States Special precautions are taken to destroy scale forms on imported stock by thorough fumigation, but it is infinitely safer to purchase from Canadian nurseries where such troubles do not exist.

Last spring an unreliable firm established temporary headquarters at Napanee, and sent agents around selling the famous Lovett strawberry at exorbitant prices. Many growers, knowing the superior quality of this variety, made large purchases. The plants proved to be worthless, but the contracts were so arranged that they could compel payment. In a few cases the stock was satisfactory in appearance, but it was afterwards learned that the plants were obtained from a neighboring patch and taken up with a plow.

Such practices should be a lesson for every grower in Canada. Reliable firms, such as those advertising in The Canadian Horticulturist, for each of whom we can vouch, can supply the requirements of the great majority of the growers, and it will be found much more satisfactory to deal with established firms such as these that are known to be reliable, and who have a reputation to maintain.

FRUIT GROWERS AND THE TARIFF

The position of the Ontario fruit growers on the tariff is an unfortunate one. Instead of going before the Tariff Commission and presenting a statement, and later having a discussion of the matter in the fruit sections, the discussion should have been held first and the commission waited on later. As it is, the Ontario Association has asked for one thing while the growers in the Niagara peninsula purpose petitioning for something entirely different. The result is that the growers are divided among themselves as to whether or not the tariff should be increased, while the opposition to an increase is strong and to the point. The position of those who oppose an increase is strengthened by the foolish action of those growers who favor asking for a higher tariff than they need, or expect to receive, in the hope that in that way they will be able to obtain what they require. By asking for more than they need they strengthen the attack of those who oppose an increase who are thus enabled to show how unreasonable their demands are and in this way to bring discredit on the whole case of the fruit growers.

The sympathy of the public is what settles the line of action taken in matters of this kind. If the commission dealers are able to show that the demands of the fruit growers are in any way unreasonable they gain this sympathy.

The statement made by Mr. W. F. Maclean, M.P., last week, at the Vegetable Growers' banquet, that there is no reason why it cannot be arranged to have the tariff on fruit and vegetables go into effect through order-in-council in any district or districts, and for stated periods, is a most important one. If this can be done, and no strong reason has been advanced to show the suggestion to be impracticable, the difficulties of the situation have largely been solved. In this way the growers in the different sections of Canada would be able to obtain the protection they require, and at the season it is needed, while the consumption of fruit at other periods of the year would not be curtailed.

This matter is worth further consideration by the growers. It might be well to arrange for a conference between representatives of the Ontario Association and those of the Niagara peninsula. The first effort of the growers should be to harmonize their views as far as possible, and then to lay their amended case before the commission. The Horticulturist strongly favors greater protection on several varieties of fruit for limited periods, but it will oppose, as being unreasonable and unwise, demands that, if granted, will prevent the consumption of foreign fruit at periods when Canadian fruit is not available.

IMPROVEMENT NEEDED AT GUELPH

What is the matter with the horticultural department at that excellent institution the Guelph Agricultural College? Why is it that so few students take the horticulture option? Why is it that those who do take that option find such difficulty in securing positions? The answer to the former question is found in the latter. The horticultural department has been running long enough to have gained a reputation equal in its field to that acquired by the agricultural department. Although comparatively few students took the horticulture special during the past few years, several promising graduates are without work such as their energy and ability deserve. Men of no greater ability, who specialized in other departments, had no difficulty in securing desirable and remunerative positions. There is no option on the college curriculum that has so many desirable features as that of horticulture. Were a reputation for excellence established by that department, students who graduated in horticulture would be in demand.

Apart from this fact, how is the Province being benefited by work done or experiments carried on at the college? Some experiments have been conducted with strawberries and with tomatoes, but how great has been the benefit to the practical grower of strawberries and tomatoes? Have the results been sufficiently advertised? The vegetable growers are thirsting after knowledge in regard to insect and fungous diseases and yet the college is able to render them but little if any assistance. What the practical grower wants is results of practical experiments and not theoretical information he is unable to use to advantage.

Vegetable growing under glass is becoming an important industry in Ontario. Why is not our Agricultural College in the van of this great work? It is all well enough to grow a few choice tomatoes and cucumbers for table use during winter, but how many experiments have been conducted along this line and the results published so that the ambitious gardener may know the varieties to put into a glass house, and the cultural methods to follow to obtain profitable returns for his labor? Fault is not being found with those in charge of the greenhouses. With the addition of lectures to the already numerous duties delegated to Mr. Hunt the wonder is that he has done so much good work. What is wanted is more greenhouse space for experimental work, and the appointment of a competent assistant. In fact the assistant is needed whether additional houses are built or not.

The Ontario Agricultural College has gained an enviable reputation. This reputation can be retained only by making still further improvements. In no branch of the college is improvement more needed than in that of horticulture.

ONTARIO HORTICULTURAL EXHIBITION

Arrangements for the next Ontario Horticultural Exhibition are already well under way. A meeting for organization purposes was held in Toronto, Jan. 23, when it was decided to hold the exhibition this year Nov. 6–10, in Massey Hall. Half rates will be guaranteed over all railroads. The officers elected were Pres., R. J. Score, of Toronto; 1st V.-Pres., W. H. Bunting, of St. Catharines; 2nd V.-Pres., H. R. Frankland, of Toronto; Sec., H. B. Cowan, of Toronto; Treas., J. H. Dunlop, of Toronto, and an Executive Committee composed of representatives from the Ont. Fruit Growers', Ont. Vegetable Growers', and Ont. Bee Keepers' Associations, and the Toronto Electoral and Horticultural Societies, and Toronto Gardeners and Florists' Association.

A financial statement was presented that showed that a deficit of some $400 connected with the last exhibition had been wiped off through the efforts of the directors, and that the prize lists and all expenses had been paid in full. This was considered very encouraging. It was decided to open the exhibition this year Tuesday evening, instead of in the afternoon, as in the past. The judging will be completed and the prize cards in place before the exhibition is opened. It was decided to have the prize lists printed and in circulation by July 1 next. In the meantime preliminary prize lists will be published in the papers. Those present were enthusiastic regarding the success of the next exhibition.

If boxes are used they should be made strong. I have heard of many boxes being so light and easily broken that they were in bad shape when they reached Montreal. I have always considered that packing in boxes is slow work.—Irvine Hicks, South Bay, Ont.

Niagara Growers Want More Tariff

AT an important meeting of the Niagara Peninsula United Fruit Growers' Association, held in St. Catharines, Jan 18, it was decided after a spirited discussion to ask the Federal Government to increase the duties on certain fruits. The increase asked is identical with that decided upon at previous meetings held in Winona and Grimsby and published in the January issue of THE CANADIAN HORTICULTURIST, viz.:

On peaches from 1 cent a pound to 2 cents.
On pears from 20% *ad valorem* to 1 cent a lb. specific.
On plums from 25% *ad valorem* to 1 cent a lb. specific.
On apples, from 40 cents a barrel to 75 cents a barrel.

A large attendance gave evidence of the interest taken in the tariff question. Different opinions were voiced and three different proposals were submitted to the meeting. Mr. W. H. Bunting, of St. Catharines, seconded by Mr. Chas. Lowry, St. David's, moved the adoption of the following:—"Resolved, that we believe the maintenance of the tariff on foreign fruits is necessary to the encouragement of the fruit industry of this country, that the tariff at present in force has a beneficial effect, and has not to any appreciative extent increased the cost to the consumer; we would, therefore, respectfully urge upon the Government that no reduction be made in this tariff but that a specific duty of 1 cent a pound be substituted whenever an *ad valorem* tariff is at present in force."

In amendment to the above Mr. Jos. Tweddle, of Fruitland, seconded by Mr. W. A. Emory, of Aldershot, moved that the Government be asked to adopt an open and closed season as requested by a majority vote at a meeting held in Burlington on Jan. 2, with the following proposed schedule of rates, the Government to regulate the tariff during the open season for revenue purposes:

Strawberries, 4 cents a lb., May 15 to July 1.
Raspberries, 2 cents a lb., July 1, to Sept. 1.
Blackberries, " " " "
Gooseberries, " " " "
Currants, " " " "
Grapes, 2 cents a lb., Aug. 1 to Dec. 1.
Cherries, 3 cents a lb., July 1 to Sept. 1.
Plums, 2 cents a lb., July 1 to Nov. 1.
Peaches, " " " "
Pears, 2 cents a lb., July 15 to Jan. 1.
Apples, 75 cents a barrel July 15 to Jan. 1.

After a lively discussion on this question of a sliding tariff, Mr. Jonathan Carpenter, of Winona, supported by J. W. Smith, of Winona, moved in amendment to the amendment that the Government be asked to increase the duties on a flat rate basis, as outlined in our opening paragraph. This was put to the meeting and carried by a large majority.

THE BURLINGTON MEETING.

A meeting of the Burlington Horticulturist Association was held in Burlington, Jan. 2, Messrs. E. D. Smith, M.P., and J. W. Smith, of Winona, were invited to attend.

The members present were unanimously in favor of an increase in the duties on fruits, but differed as to the best means of adjusting same. Some favored a flat increase; others proposed and supported the idea of a closed season. There was some talk also of asking for a revenue tariff on bananas as it was thought that the enormous consumption of bananas in this country interfered with the desire and sale for domestic fruits. Finally it was decided to appoint a committee—J. C. Smith, and A. W. Peart, Burlington, W. A. Emory, Aldershot—to draw up a schedule for a sliding tariff, same to be the voice of the meeting, with the alternative of a flat rate increase. Same committee later met delegate from Winona and Grimsby, and decided upon the schedule above mentioned. Such was presented to the mass meeting at St. Catharines and defeated by the advocates of a straight increase.

THE DISCUSSION AT ST. CATHARINES.

At the St. Catharines meeting the positions taken at meetings held at Burlington, Grimsby and Winona, were submitted to the growers and thoroughly discussed. Mr. Robt. Thompson, of St. Catharines, said that the idea of a sliding scale was absurd and impracticable. Closed season in this district would not be a favorable closed season in the Northwest. During open season consumers would buy their supply of fruit in advance of our season, both for table use and for canning. In reply, the advocates of a sliding tariff contended that before the first dates of closed season fruit could not be bought cheap enough for profitable canning and only the few could afford to buy it even for table use.

Mr. W. H. Bunting and others of St. Catharines were not in favor of either proposition for an increase in the duties except in the case of pears and plums, which should be changed from *ad valorem* to a specific duty of one cent a pound. Mr. Bunting said that he was strongly of the opinion that if the Association presses for two cents a pound on peaches that it will be so strongly opposed in the Northwest that our petition will be swamped. The Northwest is not in favor of our peaches and fruit, generally speaking, and we must go easy if we are to command our share of that market. If we can secure a five days' transportation service to the Northwest, we need not fear so much the competition from over the line.

Regarding the idea of a sliding tariff on fruits, Mr. E. A. Lancaster, M.P. for Lincoln, said that he believed such was feasible. The present tariff provides for an open and closed season for some kinds of manufactured goods.

Mr. E. D. Smith, M.P., of Winona, spoke in favor of an increase. The more he thought of the closed season idea the more favorably disposed he was towards it.

An increase in the duties is necessary: from the growers' viewpoint a sliding tariff would be the most satisfactory; from the Governments' viewpoint a flat increase may seem the most feasible. For apples an increase was asked, not so much for growers in the Niagara district, but in the interests of growers all over the Province. "In the case of peaches," said Mr. Smith, "if we can get the Government to put a duty of 2 cents a pound on them and thereby keep out California peaches, we can find a market in the Northwest for thousands of bushels that we cannot send now." As we have found the way to put our peaches in the Northwest in sound condition, and as we can grow the fruit, we should not be denied the market for want of an increase of one cent in the duties.—A. B. Cutting.

The West Wants Tariff Reduction

THE action taken recently by the Niagara District Fruit Growers in demanding a higher duty on fruit from the United States brought forth the following editorial from the Winnipeg *Free Press*, which may have been in part inspired by the Winnipeg commission dealers, and which is to a certain extent the reply of the West:

"Wholesale fruit houses of Winnipeg have dropped thousands of dollars in the attempt to handle Ontario peaches. Ontario shippers have not succeeded in sending peaches to the West in good condition. As for British Columbia peaches, they are not early, and have appeared here as yet only in limited quantities, and of those that have appeared a considerable proportion have been lacking in carrying quality. Plums and pears of British Columbia are also late, not being ready before the end of July or early in August. British Columbia, like Ontario, possesses areas of the finest fruit-growing lands on the continent, but they do not produce fruit all the year round, nor have Ontario or British Columbia fruit-growers succeeded in producing fruit of a sort to stand transportation in comparison with the strawberries of Oregon, which come to Winnipeg in prime condition. The problem of the 'carrying quality' of fruit which is both a problem of fruit production and a problem of fruit packing, is one which has not been solved, especially in regard to strawberries, either in Ontario or British Columbia. But if it were solved, why should people living in Prairie Provinces be heavily taxed, as Mr. Ernest D'Israeli Smith, M.P., advocates on fruit brought in from across the boundary in months when neither Ontario nor British Columbia have any fruit to offer?

"Fruit is not so much a luxury as a necessity to health.

"The question of the tariff taxation of fruit is a vital one to the people of the Prairie Provinces, and in view of these demands of the Ontario fruit growers, as also of the demands that were made by representatives of the British Columbia fruit growers, who appeared before the Tariff Commission a couple of months ago, some figures of what is paid out in the way of customs duties on fruit claim attention. During the months of January and February, strawberries from the United States arrive in Winnipeg in express lots at the rate of some 20 or 25 cases weekly; in April and May, 100 cases weekly. In the latter part of May and on through June they arrive in car lots, mainly from the famous Hood River plantations in Oregon.

"The only fruits which Ontario can send to the West in satisfactory condition are apples, plums and grapes, also tomatoes. Apples from across the boundary pay 40 cents a barrel duty. They cannot begin to compare with the apples either of Eastern Canada or of British Columbia, but we get them two months earlier. They do not in any way compete with Canadian apples, and nobody imports them once Canadian apples are to be had.

"The West wants tariff reductions, not tariff increases. The West will not stand up for any tariff increases, and least of all for tariff increases on fruit. If any indication is given of an intention to alter the tariff in the manner demanded by the Niagara Peninsula United Fruit Growers' Association the Government will find it met by a protest from the West that will be anything but perfunctory in its character."

In a communication dated December 20, to the Trade and Commerce Department, Mr. Chas. Kittson, Canada's commercial agent in Africa, states that a recent shipment of Canadian apples consigned to Cape Town, was seriously infested by scab, and also by codling moth, some barrels to the extent of 60% in case of the former, and 40% in case of the latter. He points out that Canadian shippers were warned that fruit so affected was liable to confiscation on arrival, without compensation to shippers or consignees, and it has lately been authoritatively stated that unless Canadian shippers refrain from shipping diseased fruit to South Africa the importation of fruit from the Dominion will be prohibited by the Cape Colony Government.

Practical Pointers from Practical Planters

Picked up and penned by A. B. Cutting, B.S.A., Special Representative of The Horticulturist, who is visiting the homes of fruit and vegetable growers in the Niagara Peninsula

SUCCESS in fruit growing depends chiefly upon four factors: the personality of the growers, proper methods of orchard management, a thorough knowledge of market economics, and the prospective condition of the market, local or foreign. The first of these, the individuality of the growers, is more important than most people think; yet everyone knows that any two persons placed in business in the same environments, and given an equal chance, will arrive at very different results. A difference in individuality, and in some cases a lack of individuality is very striking in fruit growers. How often we see, side by side, enjoying the same condition of climate and local environment, tilling the same kind of soil and growing the same class of fruit, two men attaining very different results in the fruit business! Even in our famous Niagara district many contrasts of this nature may be found.

Besides the factor of individuality the factors of marketing and markets are important also, but not more so than the factor of orchard orchardment. Some growers are apt to leave too much to chance. Even in the selection of varieties for spring planting, I find in my sojourn amongst the growers of this district that some planters are very careless in this matter. Others again are alive to the requirements of the industry and from these I have picked up some pointers of value and interest.

HOW TO SELECT VARIETIES.

The gist of these pointers shows that the fundamental principal in selecting varieties is to profit by the experience of your neighbors, to observe the behavior of varieties growing under conditions similar to your own, and to be governed accordingly. With some men personal preference largely influences the selection. For the home orchard such a system of selection may be all right, but for a commercial plantation something more stable must be depended upon. Local conditions of soil and climate must be studied and varieties chosen to suit such conditions. Some purpose must be kept in mind, and some particular market to be filled, and selection be made accordingly. Interpollination also should be considered, particularly in varieties of apples, pears, grapes and strawberries; it is safer never to plant even a peach orchard of one variety alone. "To illustrate the value of interpollination in grapes," said Mr. F. M. Carpenter, of Fruitland, "observe the case of Brighton, which seldom ripens all over the bunch unless planted near some variety that will fertilize it. In my vineyard rows of Brighton adjoining Concord fertilize and ripen much better than rows far off."

The number of varieties that one should plant will depend upon the market to be supplied and the method of marketing. When catering for both local and distant markets, plant varieties to ripen early and late so as to keep up a supply of marketable fruit from the beginning to the end of the season. When large shipments in refrigeration are in prospect select varieties that will ripen at or near the same time, or better still, plant enough trees of one variety, if self fertile, so as to have sufficient fruit of one kind and at one time to fill the car, or the apartment on board ship.

Pressure of space does not permit of all the list of varieties recommended for planting by the many growers that I have visited. At a farmers' institute meeting in Ancaster Jan. 10, the question was asked: "What six varieties of apples are the best to plant as money makers?" In reply, Mr. G. C. Caston, of Craighurst, who was the chief speaker on fruit matters, recommended the following:—Ontario, Gano, Boiken, Spy, Baldwin, and R. I. Greening. Boiken, a variety little known, is a very early bearer and produces abundant crops yearly. Mr. Caston advised top-grafting the tender varieties of apples on hardy stocks, and, in particular, he recommended top-grafting King on Talman Sweet to ensure early bearing and a double yield.

CHERRIES.

"The best sweet cherries for my district," said Mr. H. F. Burkholder, of Bartonville, "are Schmidt's Biggereau, a reliable yielder and a very profitable sort; Black Oxheart, Black Eagle, Black Tartarian and Windsor."

He and other growers in that locality recommend in sour cherries the old reliables, Early Richmond and Montmorency.

Cherry trees are very difficult to graft. For best results it should be done in early spring just before growth starts. The bird cherry makes a good stock to graft sour cherries upon.

POINTERS ON PLUMS.

Mr. C. C. Pettit, of Fruitland, who has an orchard of over 2,500 plum trees, including about 1,100 Lombards, discussed the Lombard situation with the writer and said that there are too many Lombard trees in the country. When there is a glut in the plum market the Lombards are the ones to suffer. Although such gluts may be the result of over-production in certain localities they are more probably due to a lack of proper distribution. One of the crying needs of our fruit industry is for a system of distribution that will do away with disastrous plum gluts such as growers have experienced during different seasons in the recent past.

It is well known that oftentimes when Hamilton, Toronto, and other large markets are overstocked with plums, that in smaller towns they cannot be bought at any price. "To illustrate this fact," said Mr. Pettit, "I was talking during the plum glut of 1903 with a man from the eastern townships who said that in his town he paid as high as 75 cents a basket for plums, when in Toronto and Hamilton they could be bought for 10 cents and less."

Although Mr. Pettit has such a large percentage of Lombards in his orchard he would not advise new planters to set out any trees of this variety. In yellow plums, also, there are some well-known ones that are not worth planting, particularly General Hand which is unproductive. Some nurserymen are pushing the Stanley which is identical with the General Hand—another case of an old variety with a new name. Among the many profitable varieties, Mr. Pettit recommends Burbank, Bradshaw, Canada Orleans, Washington, Green Gage, Yellow Egg, Quackenboss, Damson, German Prune and Reine Claude.

THE JAPAN PLUMS.

Whether or not it is wise to plant Japan plums is a disputed point. Some of the growers that I have visited say that this class of plum is being planted too much. Japan plums fall to pieces when canned, particularly the Abundance, and as a consequence they are not wanted at the canning factories. Others claim that there is more money in this class of plums than in any other, being early and very productive. As for canning these men cite the case of Satsuma which is, they contend, one of the best for canning to be found in any class.

PLANTING PEACH TREES.

"When selecting or buying peach trees for planting," remarked Mr. J. W. Smith, of Winona, "the height should be the last consideration. Large trees are not the best—medium sized or small ones, if smooth and thrifty, are more satisfactory—in no case should they be more than one year from the bud. The trees should be stout and well grown at the collar, and have plenty of roots; a good strong top is sure to follow." Plant the trees just deep enough and firm enough to be solid when future top is formed.

FORM LOW-HEADED TREES.

Mr. Smith believes in low-headed trees, but says that the head should be started in the nursery row, by nipping back when grown to the right height, say 18 inches, rather than cut back after the tree has grown to good size. Trees with heads well started in the nursery are worth at least five cents more than others not so treated. Trees not headed back and formed in nursery row cannot be headed as low as they should be, as strong buds are few and irregularly placed low down on the trunks of such trees.

The present custom is not to form the heads in the nursery, and, as Mr. Smith said, nurserymen should not be expected to do so until the demand for low-headed trees warrants the change. Any planter who desires such, however, will be gladly accommodated by nurserymen if he will first tell his wants to the nurserymen during the previous season and in plenty of time to do the necessary work in the nursery.

Some growers object to low-headed peach trees on the ground of expense and labor at the time of cultivating. Mr. Smith claims, while recognizing the force of this argument as far as it goes, that the greatest expense and labor comes at the time of picking, not earlier in the season. As a consequence it is better to hire additional help for cultivating and have low trees that may be picked from the ground than to try and economize time and money in cultivating high-headed trees, that must be picked from ladders. A picker on the ground, provided the fruit is within his reach, will pick twice as fast and twice as much as one on a ladder. It is wise, therefore, when planting for growers to bear this in mind.

BUY HEALTHY STOCK.

"I received a lot of peach trees from a nursery in Ontario, in each of which I found one or two borers. I have reason to believe, however, that the trees were not grown in this Province, but were imported from over the line." So said Mr. Geo. Awrey, East Hamilton, who cautions growers against buying infected stock. Nursery trees should be free from fungi and injurious insects. It is best to avoid trees grown in districts subject to tree troubles; such as peaches from a region where leaf curl is prevalent, or pears from a section where blight is known to exist.

PLANTING GRAPES.

"When planting grapes cut off the previous year's growth to two buds on a single vine. To plant quickly, stake out distance apart of rows, plow furrow in same direction as row is to run, then mark out the distance apart vines are to be set in the row. Plant firmly, then cultivate with scuffler to loosen surface soil and to fill up furrows. A hoe crop may be grown first year which should be cultivated at regular intervals." Such is the advice of Mr. Murray Pettit, of Winona, who also recommends for planting the following varieties in order of ripening:—Campbell's Early, Worden, Delaware, Lindley, Concord, Niagara, Agawam, Catawba, in localities where they will ripen, and Vergennes. In early localities, on heavy soil, good money may be made in growing Champions if they are well thinned. Mr. Pettit follows the fan system of training, which we hope to describe in a future issue of THE HORTICULTURIST.

Both as a fruit grower and a fruit merchant we find THE CANADIAN HORTICULTURIST excessively interesting, and we have gained some very valuable information from the hints contained therein.—Joel Goodwin, Manchester, Eng

Apples at Five Cents a Barrel

J. J. Philp, Dominion Fruit Inspector, Winnipeg

Apples are more in demand in Winnipeg at this season than any other fruit. They are more of an actual necessity than are the finer and more expensive fruits.

This year in Winnipeg to many the apple trade is a very unsatisfactory proposition, not to the regular and legitimate dealers, or those who have a regular trade and are handling their stock intelligently, but to those who are shipping here on commission, or for storage, and have no proper facilities for watching their fruit, or a regular trade to absorb the accumulation of off stock that is bound to appear at this time of the year. To the latter the experiences of the present season cannot fail to be anything short of disastrous. One eastern man sold 75 barrels, and notwithstanding that some of them brought $4.25, the whole lot netted him less than $1.00.

There was a time when the writer used to think that we had the very best climate for keeping apples over winter. Closer observation has convinced me that this is a mistake. Few cellars can be procured that are altogether free from artificial heat. This means want of uniformity of temperature, and lack of proper ventilation, two conditions that when combined cause the destruction of the fruit stored.

It may be asked what about cold storage? It's the very best, but could not accommodate one-half of the quantity that has to be stored here for the three months after navigation closes. It is astounding to look over the stocks stored in Winnipeg at the present time. Just fancy: Snow apples, lots of them, XXX, and XX, the first some of them not too bad, but the latter small, scabby, and rotten. Many of them are not worth the price of the barrel in which they are packed. Also in stock there are: Colvert, Jenneting, Wealthy, McIntosh Red, Haas, Golden Pippin, and other varieties too numerous to mention. Very few of these will realize enough to pay for their transportation, and all the time they are seriously injuring the sale of good stock. Herein we have the pith of the whole matter. Such apples as many of these are can never be shipped here except at a loss, because they are not worth anything, and never should have been shipped.

A couple of weeks ago The Ottawa Fruit and Produce Co. auctioned off large quantities of Ontario fall fruit for five cents a barrel. From 300 to 350 barrels a day were sold, according to a recent issue of the Winnipeg *Free Press*, for several weeks. These were fall apples that should have been sold by November. The purchasers were Yiddish people.

Shippers should send half the quantity, and that the best half. This gives only half the expenses, and half the risk. Better marking of the barrels according to the Fruit Marks Act should be observed. Shippers must consider the effect that a fine package, neatly marked, has on the sale of the article. I believe that a man's character and personal habits can be told by the way the apple barrels are marked. Besides, the law says so, and the inspectors are supposed to see that it is observed.

The wholesale fruit dealers at a recent meeting appointed a committee to formulate resolutions regarding the standard for a No. 2 or XX grade, and other amendments that they think will improve and help to facilitate the working of the act. If there are any amendments to be made that will improve the act, they will be very welcome, and cannot come too quickly, but in any event let all discussion in reference to its several features be on a higher plane than the purely selfish idea that if it is going to benefit the other fellow more than it does me I won't have it. That our fruit interests are in need of being raised to a higher standard, no one in close touch with the business will deny, and all should aim to have a part in the good work.

The Fruit Industry of Nova Scotia

G. H. Vroom, Middleton, N.S.

The day is not far distant when this little province down by the sea, Nova Scotia, will be exporting over a million barrels of apples in addition to supplying the ever increasing demand in the local markets. Great progress has been made during the past few years.

The earliest record we have of apple-growing in this province is in the year 1633. Previous to 1812 the fruit industry was only an industry in name, and consisted in growing a lot of seedling apples and a few good varieties. These latter were shaken from the trees and marketed in old flour barrels, and found sale in local towns and cities in the Maritime Provinces. The poorer sorts and seedlings were carted away to the mills and the juice converted into cider.

In the year 1812, the Hon. Charles R. Prescott, M.L.A., bought a farm at Starr's Point and started fruit-growing. This marks a new era so far as the fruit industry is concerned in Nova Scotia. Most of the varieties of fruit planted by Mr. Prescott were imported from England, and in that way very many of the best standard varieties of to-day were introduced. In his list were to be found the Spy, Ribston, Blenheim, Baldwin, Gravenstein, Fameuse, Greening, Spitzenburg, and others.

His list of pears, plums, cherries and other small fruits contained many of the leading standard varieties of our time.

About 1849 the first fruit show was held in Canard, Kings County. At that show Mr. Prescott exhibited 63 varieties of apples and 20 varieties of pears. From this time on the fruit industry increased and grew until in the year 1880 the export of apples from St. John and Halifax to Great Britain amounted to 24,000 barrels. In 1890 the export had reached the 100,000 barrels, and in the year 1903 the total export of apples from Nova Scotia to the Old Country amounted to 532,000, besides over 80,000 barrels sold in local markets.

It is only within the last 20 years that fruit has been grown very much outside the district known as the Annapolis Valley, which includes the stretch of country lying between the north and south mountains in the counties of Annapolis and Kings. This valley is about 80 miles in length and three to eight miles in width. The best orchard land is near the foot of the mountain and on the hilly slopes. The soil is deep and fertile, and frost does less damage than it does on the low lands near the rivers.

In the early eighties other parts of the province made small beginnings in the fruit-growing industry. The farmers in the county of Lunenburg began to wake up to the fact that fruit-growing was a pleasant and profitable industry, and decided to try the possibilities in that grand, historic old country. Their efforts were crowned with a marked degree of success, and to-day some of our finest and best fruit comes from Lunenburg county. Hants county also embarked in the business on a somwhat extended scale about the same time, with the result that to-day fruit grown in the Avon Valley is sought after in both the local and foreign markets on account of its superior quality. Similar advancement has been made in other sections.

With few exceptions the fruit business in Nova Scotia is carried on in an up-to-date manner. Among those exceptions may be mentioned the tendency to pack and market third-grade stuff, which is detrimental to the reputation of number one Nova Scotia fruit. Among the up-to-date features of the Nova Scotia fruit business is the abundance of first-class fruit houses along the lines of railway where the farmer can store his apples and haul them when the roads are good in the fall. This does away with the old method of hauling through snow-banks or mud, or running the risk of having the fruit frozen on the highway.

In these frost-proof houses the fruit is packed under the supervision of a competent man who has had sufficient experience to qualify him for such a position. When a steamship arrives in port cars are run alongside the fruit house, and the work of loading a car is only a matter of a short time. The cars are better than in former years and, taking everything into consideration, good facilities are in existence to ensure our fruit arriving in the British market in excellent condition, if proper care and precaution is taken. This is benefiting the industry and helping Nova Scotia fruit to hold its own in the markets of the world.

Notes on the Fruit Trade

E. H. Wartman, Dominion Fruit Inspector

Handlers and speculators in Canadian apples are a class that make many mistakes, and run a little wild in their ideas. Frequently buyers say, "If I only had purchased 5,000 instead of 10,000 barrels, or 10,000 rather than 20,000. By purchasing the smaller quantity my help engaged could have done good work and got through before frost had a chance to do any damage." Many a buyer has purchased from small growers 25 to 50 barrels on the trees, not making provision to house or shelter this fruit as gathered. When the time comes to gather you have the spacious out-door to do your work, through rain, snow, heat or mud. The markets demand a clean, neat package, but how is it possible under these circumstances? Buyers should pass such ill-provided ranches, and teach such men it is absolutely necessary to provide for their products. The buyer who left such fruit would be money in pocket. Other buyers go around the country buying small lots of 20 to 40 barrels that have been picked some 5, 10 or 15 days, and exposed to heat and all kinds of weather. No fruit should be bought under these circumstances. In this day of advancement buyers are looking for sound goods in neat, clean packages. Co-operative associations have been formed and are doing good work. It is hoped soon that all those who have no place to house and properly pack their fruit in, will have one of these close at hand, where the fruit can be taken and properly cooled, graded and packed; then a buyer can at any time get a full car of the varieties he desires.

As the demand for choice apples in boxes is increasing, we need not look for any more barrel famines. Fruit buyers this year who have tried to live up to the requirements of the Fruit Marks Act have been well compensated. The principles of this act are only the golden rule after all.

A Business Change.—The first of this year Mr. Felix A. Perkins, of the firm of Perkins & Paine Manufacturing Co., Port Dover, sold his share and interest in this firm to Otto G. Palm, who, with Mr. John B. Paine, of Toronto, will continue manufacturing the Little Giant Sprayer in Port Dover, Ont., under the firm name of the "Little Giant Sprayer Mfg. Co." The office will be in Toronto at 41 Colborne St. They have several orders on hand, and are rushing out machines as fast as possible. This is one of the most practical spraying machines on the market, and as it is a Canadian invention and made in Canada, it ought to be patronized by Canadian fruit growers.

Excellent Work of the Horticultural Societies

Judging from the enthusiasm that is shown by the reports from the annual meetings of the different Horticultural Societies in Ontario, a great improvement will result this year in the appearance of the various towns and cities where these organizations exist. The result of the selection of officers for many of the societies have reached THE HORTICULTURIST. Lack of space prevents the publication of not nearly as full a report of the numerous meetings as we would like.

PICTON.

At Picton the new officers are: Pres., P. C. Macnee; 1st V.-Pres., W. J. Carter; 2nd V.-Pres., Thos. Bog; Sec.-Treas, Walter T. Ross. Directors, R. Davison, W. H. Seth, J. Roland Brown, J. L. Graydon, H. Platt; Auditors, J. P. Blakely, J. C. North.

The premiums promise to be greater than ever as the money spent last year for a United States garden magazine will be used for premiums.

HESPELER'S OFFICERS.

The officers for 1906 at Hespeler are: Pres., David Rife; 1st V.-Pres., Henry Bolduc; 2nd V.-Pres., Peter Morlock; Sec., Robt. Davis; Treas., John E. Warren; Auditors, James Pringle, D. N. Panabaker; Directors, H. Prestien, Abr. Rudell, F. Evans, Owen Reist, R. H. Knowles, James Hyslop, James Moreland, Ed. Birkin, Thos. Chesterman. The members are to be given practically the same premiums as were given last year. This includes a valuable list of plants and THE CANADIAN HORTICULTURIST

COBOURG'S PLANS.

At Cobourg officers were elected as follows: Pres., J. D. Hayden; 1st V.-Pres., Dr. Ferris; 2nd V.-Pres., Wm. Massie; Directors, D. Denton, H. J. Snelgrove, M. Jaynes, Alfred Landymore, J. G. Jackson, John Mason, T. A. Chapman, E. C. S. Huycke, K.C., and Mrs. Jas. Barr.

The Board of Directors met immediately and Major H. J. Snelgrove was re-elected Secretary, while Mrs. Jas. Barr was elected Treasurer. The Finance Committee will comprise the President, the Secretary and the Treasurer.

Sec. Snelgrove suggested that the society cooperate with the town council in cleaning up unsightly corners and in beautifying the town generally. President Hayden recommended window gardening at the town hall and the growing of plants and vines on the balcony. The same could be done at the post office and the public schools.

An effort will also be made to beautify the town's gateway, the G.T.R. station. It was unanimously decided to continue taking THE CANADIAN HORTICULTURIST.

KINCARDINE ENERGETIC.

The following officers were appointed at Kincardine: Pres., A. Clinton; 1st V.-Pres., Joseph Abell; 2nd V.-Pres., M. McCreath; Directors, Dan. McDonald, Wm. Welsh, J. Miller, R. D. Hall, George Tuck, Rev. J. C. Pomeroy, F. H. Hoffland, A. C. Patterson, Jos. S. Gadd; Sec.-Treas., Joseph Barker; Auditors, T. H. Scougall and Ed. Fox. The energetic work of the past season will be continued.

SMITH'S FALLS.

At Smith's Falls Dr. McCallum was again elected President. The doctor has filled the office continuously since the formation of the society nine years ago. The other officers elected were: 1st V.-Pres., Mrs. Wm. Richy; 2nd V.-Pres., Mrs. W. A. Wood; Directors, Mrs. Wm. Johnston, Mrs. G. F. McKimm, Mrs. R. C. Currie, and Messrs. Wm. Keith, S. E. Arnold, F. Ballentyne, Jno. Rabb, W. J. Graham, J. T. Pearson, H. W Hutton; Auditors, J. J. Kerfoot and H. A. Lavell. Mr. C. A. Weaver was appointed Sec.-Treas.

Every effort will be put forth to increase the usefulness of the society.

OTTAWA'S PLANS.

The Ottawa Society selected officers as follows: Pres., S. Short; 1st V.-Pres., E. Mepsted; 2nd V.-Pres., Mayor Ellis; Board of Directors, R. B. Whyte, Ald. Putnam, J Graham, G. A. White, W. H. Snelling, Jos. McNabb, P. G. Keyes, T. McCann, and W. H. Ostrom; Sec.-Treas., J. F. Watson. Arrangements are being made to hold a series of meetings during the winter months at which papers will be read on horticultural topics and demonstrations given in pruning, etc.

DESERONTO ORGANIZED.

The Deseronto Society which did such good work last season, elected the following officers: Patrons, Major E. Walter Rathbun, F. B. Gaylord, Mayor John Dalton; Patronesses, Mrs. Gaylord, Mrs. F. S. Rathbun, Mrs. Blair; Hon. Pres., P. Slavin; Hon. V.-Pres., J. P. Ashworth; Pres., F. B. Gaylord; 1st V.-Pres., Dr. W. J. Pasmore; 2nd V.-Pres., J. B. Davidson; Directors, Mrs. McGaughey, Mrs. E. W. Rathbun, Mrs. Smellie, Mrs. Rixen, Mrs. Gaylord, Mrs. McClew, and Messrs. P. Casburn, H. E. Parks and D. McClew; Exhibition Manager, H. E. Parks; Sec.-Treas., D. McClew.

It was pointed out that an untidy and unattractive dooryard was now the exception. The grounds competition will be arranged for again this season. The annual flower show will be held on August 29.

WOODSTOCK'S OFFICERS.

The newly appointed officers at Woodstock are: Hon. Pres., G. R. Pattullo; Pres., R. W. Woodroofe; 1st V.-Pres., J. W. Armstrong; 2nd V.-Pres., Mrs. James Hoare; Sec.-Treas., Maurice Dawes; Directors, Mrs. J. W. Armstrong and Messrs. Whealey, Richmond, H. E. Karn, Whitehead, Vrooman, Becker, Tindale, and Hoare.

Although the members took but little interest in the annual show of the society last year it was decided to hold it again this summer. Pres. Woodroofe advocated that the management of the parks and play grounds of the city should be under the management of a park commissioner.

SIMCOE'S SEED DISTRIBUTION.

At Simcoe the new officers are:—Pres., H. H. Groff; 1st V.-Pres., E. Bonghner; 2nd V.-Pres., J. A. Campbell; Sec.-Treas., J. Thomas Murphy; Directors, I. S. Rowat, H. S. Macpherson, Thos. Haddow, Jos. Gilbertson, Henry Johnson, H. F. Cook, E. E. Collins, A. Gilbert, W. D. Boyd. Excellent results followed the distribution of seeds to the school children in 1905, and that work will be taken up again this season. Besides this, seeds, bulbs, and trees are given to the members.

WATERLOO'S PREMIUMS.

The officers for 1906 at Waterloo are: Pres., R. Y. Stuart; 1st V.-Pres., Ammon Merner; 2nd V.-Pres., Cleason Shantz; Sec.-Treas., J. H. Winkler; Directors, A. Musselman, Wm. Miller, Chr. Scheifele, Fred. Czerwinski, Geo. Bolduc, J. H. Roos, Hy. Bracey, Miss M. Bruce and Mrs. Hohmeier.

For this year the inducements are: The CANADIAN HORTICULTURIST for 1906. A quantity of Gladioli bulbs, and a choice of one of the following premiums: (a) 2 German Prune trees; (b) 2 pear trees—Louise Bonne de Jersey; (c) House plants. In addition to this the society will give a quantity of bulbs next fall without further cost.

MEETING AT LINDSAY.

The following officers are charged with the management of the Lindsay society:—Pres., Robert Chambers; 1st V.-Pres., Alexander Cathro; 2nd V.-Pres., Mrs. D. C. Trew; Directors, F. J. Frampton, S. Nevison, Geo. Irwin, Byrd Woods, G. H. Wilson, T. Connolly, C. Hughan, Alex. Skinner, and Mrs. Ancil Mills. Mr. F. J. Frampton was elected Sec.-Treas.

BELLEVILLE'S INDUCEMENTS

At Belleville the election of officers resulted as follows: Pres., Wm. Rodbourne; 1st Vice-Pres., H. J. Clarke; 2nd Vice-Pres., S. J. Wedden; Directors, Mayor Sulman, J. Harris, S. A. Gardner, F. D. Diamond, W. J. Diamond, W. Kemp, E. Naylor, E. T. Cherry, and W. C. Reid. The officers met at the close of the annual meeting and elected Mr. W. J. Diamond Sec.-Treas. Special inducements for 1906 include a fine collection of plants, shrubs and fruit trees, and THE CANADIAN HORTICULTURIST for a year.

SEAFORTH'S LOSS.

At the annual meeting of the Seaforth Horticultural Society Robert Scott was elected Pres.; Wm. Hoag, V.-Pres.; and H. W. Brown, Sec.-Treas. It is the intention this year to award each member a copy of THE HORTICULTURIST, practically his own choice of trees, plants, bulbs and seeds to the retail value of $1.50 for spring planting, and a collection of about 30 bulbs in the fall. Monthly meetings will be held and a flower show in the early fall. The society met with a heavy loss in the removal from town to Owen Sound, of Mr. Wm. Elliott, who had been secretary for years and had worked up interest to its present height.

STIRLING'S RESULTS.

The Secretary of the Stirling Society, Mr. G. G. Thrasher, reports that they find it beneficial to expend the funds on improving the public park, as well as looking after the individual wants of the members. The benefits and results of the Horticultural Society are noticeable both in the park and in the individual homes.

MITCHELL'S GOOD WORK.

A. J. Blowes

The Rev. I. Kenner was selected as Pres., and Mr. A. J. Blowes, Sec., of the Mitchell organization. In a recent letter to THE HORTICULTURIST, the president outlined the good work done during the five years since the society was formed. One by one individual houses and lawns have been made beautiful, and the infection spread until now practically every resident has made some attempt to make his home a credit to the town. The churches and the town hall have been improved, and the town fathers passed a by-law excluding bovines from the streets.

MIDLAND'S CHILDREN ENCOURAGED.

Midland society selected Mr. Frank Cook as Pres., and Mr. E. H. Piggott as Sec. The latter wrote THE HORTICULTURIST as follows: "The most encouraging work we have taken up is the distribution of seeds to school children and awarding prizes for bloom at the fall fair. We distributed 800 packages last spring."

CIVIC IMPROVEMENT AT NAPANEE.

The following officers were elected at Napanee: Pres., W. S. Herrington, K.C.; 1st V.-Pres., Mrs. J. A. Shibley; 2nd V.-Pres., Mrs. H. T. Forward; Sec.-Treas., Miss J. E. Ham; Directors, Mrs. D. C. McNaughton, Mrs. J. L. Boyes, Messrs. A. W Grange, Thos. Symington, G. F. Ruttan, Geo. Gordon, F. F. Miller, John Wilson and Clarence M. Warner. Civic improvement will receive special attention during 1906. A lecturer will be brought to the town to advise regarding park improvement and other matters of interest to lovers of flowers.

TORONTO TO ARRANGE FOR ADDRESSES

At the annual meeting of the Toronto society the following officers were elected: Pres., H. R Frankland; 1st V.-Pres., W. G. Rook; 2nd V.-Pres., George Musson; Directors, R. J. Score, Lieut.-Col. Delamere, F. Abbott, C. J. Agar, G. H. Mills, William Jay, H. Simmers, W. Williams, and G. C. Arnott; Representative to Industrial Exhibition Association, H. R. Frankland; Delegates to Ontario Horticultural Exhibition, R. J. Score, H. Simmers, W. G. Rook and Thomas Manton, Delegate to Ontario Horticultural Society; H.

R. Frankland; Sec.-Treas., Chas. E. Chambers. About four meetings will be held during the year, exclusive of the annual meeting and the annual excursion. These meetings will be devoted to the more important subjects connected with horticulture, such as a contemplated address by Mr. J. Horace McFarland on "Civic Improvement" and addresses such as that delivered by Dr. Fletcher in June last. It is claimed that fewer meetings and better subjects would be conducive to a much larger attendance.

GRIMSBY HELD MEETINGS.

At Grimsby the Pres. for 1906 is Dr. Clark, and the Sec. Mr. J. W. Brennan. During the past year several fine exhibitions and regular meetings were held. Travellers frequently express their admiration of the beautiful lawns and gorgeous display of flowers.

DURHAM'S HOMES IMPROVED.

The officers of Durham Society for this year are: Pres., Gilbert McKechnie; 1st V.-Pres., Geo. Furneaux; 2nd V.-Pres., Wm. Scaif; Sec.-Treas., Chris. Firth. The secretary writes THE CANADIAN HORTICULTURIST as follows:—"A great impetus has been given to home improvements in the way of ornamentals. Evergreen and shrubbery, and flower gardens have been started where such things have never been before, especially about the homes of farmers, for a radius of eight or ten miles around the town. A great improvement is to be noticed also in the surroundings of town residences

VANKLEEK HILL PROGRESSIVE.

A new society was formed at Vankleek Hill and officers elected as follows: Pres., J. L. Browne; 1st V.-Pres., E. Z. Labrosse; 2nd V.-Pres., A. R. Metcalfe; Sec.-Treas., D. T. Mode; Directors, J. Hurley, A. Bancroft, J. MacCallum, F. B. Bouden, J. S. MacIntosh, P. Dusserre, J. Irvine, H. C. Jones, and S. A. Huntington. The organization was effected chiefly through the instrumentality of the newly elected president, who had been connected with the Durham society. Special inducements are offered in giving premiums of ornamental trees. shrubs bulbs and plants, and low rates on fruit trees and other nursery stock. Besides the members will receive THE CANADIAN HORTICULTURIST for a year.

Will Improve the Horticulturist

At the annual meeting of the Horticultural Publishing Co., Limited, held in the offices of the Company, Toronto, Jan. 24, it was decided to still further improve THE CANADIAN HORTICULTURIST. Various departments of the paper are to be strengthened; it will be enlarged by four pages in each issue, and the cover will be improved. The following officers were elected: Pres., W. H. Bunting, of St. Catharines; 1st Vice-Pres., J. H. Dunlop, of Toronto; Sec.-Treas and Managing Director, H. B. Cowan, of Toronto.

The board of officers consists of those already named, and Messrs. Alex. McNeill, of Ottawa, representing the Ontario Fruit Growers' Association; Herman Simmers, of Toronto, and Harold Jones, of Maitland. It is the intention of the management to make THE CANADIAN HORTICULTURIST a publication of which Canadians may feel proud, and one that will hold its own with any other publication of a similar nature on the continent.

A general statement of the Bank of Hamilton shows that they have a capital stock of $2,440,740. After paying the customary dividends this bank has been able to place in the reserve fund the substantial sum of $135,000. A few new branches have been opened during the year in Ontario and Manitoba, and special attention has been given to strengthening and building up the business at points where offices had already been established. It is proposed that $500,000 additional capital be subscribed and used in providing for the future growth of the bank's business. It has also been decided that the practice of declaring dividends every three months be adopted.

Dealing With the Tomato Question

A. B. Cutting, B.S.A., our Special Representative

At a meeting of the Hamilton branch of the Vegetable Growers' Association, held in Hamilton on Jan. 13, a committee was appointed to confer with the executive of the Consolidated Canners' Association of Canada and discuss the tomato question. The committee comprises Messrs. E. G. Mahoney, R. H. Lewis, P. Ray, H. D. Binkley, and A. E. Bates. It was decided to approach the canners in a businesslike way and ask for a business understanding. The vegetable growers of the district want a square deal and in return are ready and willing to guarantee superior excellence in the commodity that they have to offer in exchange.

Already some of the factories in this district have circulated rumors to the effect that they have contracted for all the tomatoes they require for next season. Growers should not be hoodwinked by reports of this nature as they are far from correct. In proof of this, we can cite the case of a factory representative who, when soliciting contracts in the vicinity of Hamilton, told each and every grower in turn that his factory required only 1,000 bushels more; when the contract was secured, the same story was told the next man and his neighbor until the whole neighborhood was completely canvassed. It is known that a few growers were led to contract for the coming season but the great majority have not yet done so, nor do they intend to do so until they get a square deal.

One of the members stated that last season the canners took pains to keep a record of the grade and quality of each grower's tomatoes as they went in the factory, so that, in the event of a raise in price for this year, they would know where the best stock may be secured. This action on the part of the canners indicates two things:—first, as regards the canners, it shows that they are not so independent as they would have the growers believe, and that though they would demand high grade stock, they would pay an increased price if they had to; and second, as it effects the growers, it shows that a raise in price would mean greater discrimination in quality and grade, and as a consequence the grower of trash would be left out in the cold—this is as it should be.

Mr. Mahoney spoke briefly on the advantages of co-operation in this matter. The association can do a power of good for its members. During the past year a little friction was caused in one or two instances by members contracting at prices lower than asked by the association. These are things of the past, and should an incentive to do their duty in the future. Unity of effort is necessary to achieve results. This sentiment was supported by Mr. Emory who urged the members to stand together not only upon the tomato question but also in all matters that affect the association. He pointed out the fact that beside this possibility of better prices for tomatoes many other benefits may be derived.

Practical Co-operation

The committee in charge of the co-operative work in connection with the Ontario Fruit Growers' Association have decided to concentrate their efforts during 1906 and put forth a special effort in about a dozen places to form co-operative shipping associations. It was decided that in former years an attempt had been made to carry on this work too extensively, and it is expected that if efforts are directed to fewer places it will result in strong associations that will serve as object lessons to growers in other parts.

It was recommended that the Minister of Agriculture be advised that a series of experiments for the spraying for the Codling Moth, Scab, San Jose Scale, Grape Rot, and other fungous diseases, should be carried on as extensively as possible during the summer. It was suggested that a committee be appointed in each section to act in conjunction with Prof. H. L. Hutt, of the O.A.C.; Secretary Hodgetts, of the Ont. Fruit Growers' Assn., and a representative of the Department of Agriculture, and that this committee inspect the work done two or three times during the season and have the compiled results published next fall.

Owing to the difficulty in obtaining reliable information regarding the prospects of the season's crop and the probable prices, it was proposed that correspondence be inaugurated between each of the co-operative fruit growers' associations and Sec. Hodgetts, so that the associations may be kept in closer touch with each other. It was also recommended that the different co-operative associations should unite in the effort to advertise their products by making as large and as representative an exhibit as possible at the Royal Horticultural Society's Show in London, Eng., as well as at other important shows, and that a representative be put in charge.

The Dominion Dept. of Agri. will be asked to continue the supervision of the work connected with the transferring of fruit shipments from the railways to the steamers at Montreal, and if necessary, to appoint special inspectors to look after this work. It is felt that commercial agents in the Old Country should engage extra help for two or three months during the shipping season to personally look after the shipments and report their condition. The good work accomplished by Mr. B. T. Boies, of British Columbia, in showing the Ontario growers the proper methods of packing and grading fruit was referred to, and it was decided to ask the Dominion Government to continue such demonstrations.

Items of Interest

A meeting of the members of the Toronto Vegetable Growers' Association will be held in the Albion Hotel, Feb. 3, at 3 o'clock, when "Forcing Rhubarb" will be discussed by Mr. Thos. Delworth, of Weston, and "Celery Growing," by Mr. George Syme, jr., of Carlton West. "Blights on Vegetables, Their Causes and Remedies, if Any," will be fully discussed. The first meeting held recently was a great success.

At a meeting of the Hamilton branch of the Ontario Vegetable Growers' Association, held in Hamilton, Jan. 13, the newly elected President resigned. Mr. E. J. Mahoney, President for 1905, was appointed without opposition. Directors for 1906 were also appointed as follows:—Chas. Scheer and W. A. Emory, Aldershot; P. Ray, Waterdown; John L. Lewis and John Ewing, Hamilton; Frank Crosthwaite, Bartonville; and J. J. Fields, Burlington.

The members of the committee in charge of co-operative experimental work in horticulture in connection with the Ontario Agricultural and Experimental Union appointed at the annual meeting are: Prof. H. L. Hutt, directors H. S. Peart and J. Albert Hand. Last year about 200 members experimented with the different varieties of fruits. During the coming season experimenters will receive the different bush fruits, grapes and apples.

The annual meeting of the British Columbia Fruit Growers' Association will be held in Vancouver, on Feb. 7 and 8.

Growers should lay in a stock of baskets, boxes and other fruit packages before the harvesting season comes. Mr. C. W. VanDuzer, of Grimsby, carries a full line of all such goods.

Niagara Peninsula Growers Advocate New Lines of Work

IN addition to taking a stand on the tariff question the members of the Niagara Peninsula United Fruit Growers' Association at their recent meeting at St. Catharines, transacted considerable other business of importance. Officers were elected for the ensuing year as follows:—Pres., Thos. Berriman, of Niagara Falls, Ont.; 1st Vice-Pres., Jos. Tweddle, of Fruitland; 2nd Vice-Pres., F. H. Goring, of Homer; 3rd Vice-Pres., W. A. Emory, of Aldershot; Sec.-Treas., C. E. Fisher, of St. Catharines; and a strong executive.

The following resolution was moved and carried: "Whereas, the bearing orchards of this district are largely planted from trees that in many cases have proved untrue to name, and in many others with trees propagated from parent stock having come inherent weakness or disease and as a result have degenerated both in hardiness and unproductiveness: Therefore, we would urge the Provincial Government to institute the necessary legislation with the view to the improvement of our nursery stock, and that a series of experiments along this line be initiated in our experiment stations and amongst our prominent fruit growers with the view of educating the public to the importance of securing pedigreed stock, and that a copy of this resolution be submitted to the Minister of Agriculture."

THE BASKET QUESTION.

The association decided to ask the Government to amend the law regarding baskets as proposed at the last meeting except in the case of the six-quart basket which should be 4½ inches deep instead of 4⅝ inches.

Mr. E. D. Smith declared that the present clause in the act, allowing growers to use special sizes when such size is stamped in large letters on the side of the basket, should be done away with. Growers should be compelled to use a standard size and no other. Consumers do not know the law and are imposed upon by growers who use a small size even though such size is stamped on the package. A stamp has no meaning to the oridnary consumer and even to many retail dealers. If growers can use any size basket they like, we may as well have no act at all.

In opposition to Mr. Smith's proposal, the argument was advanced that since the Ontario basket factories have combined, growers may want American baskets which are of a different size and which could not be used if this law is changed. Mr. Smith: "All that is required is to give orders in advance and American makers will fill them and meet all demands." When put to the meeting the proposal did not carry.

NEW FRUIT EXPERIMENT STATION.

The association passed a strong memorial to the Minister of Agriculture asking that an extensive experiment station be established in the Niagara district. Mr. Linus Wolverton, of Grimsby stated, that at a recent meeting of the Board of Control of Fruit Experimental Stations for Ontario it was decided to recommend to the Government the advisability of establishing a station of this nature in South Ontario.

Prof. Robt. Harcourt, O.A.C., Guelph, delivered an interesting address on the use of fertilizers in orchards.—A. B. CUTTING.

Vegetable Growers' Banquet

At the annual banquet of the Toronto branch of the Vegetable Growers' Association, held last week, the spirit of advancement that has seized the Ontario Vegetable Growers of late was plainly manifested. Every speech was full of enthusiasm, and showed the increasing tendency of the growers to co-operate.

The president of the local association, Mr. George Syme, jr., made a most capable chairman.

Mr. W. F. Maclean, M.P., said that a specific duty is in the interest of the farmer, and that in some cases it should be made to go into effect in certain months of the year by order-in-council, and that geographical conditions should be considered in such orders. In discussing transportation facilities, he said that the express rates should be regulated so that there would be no discrimination given to imported goods by the transportation companies.

The toast to the Vegetable Growers' Association was proposed by Mr. F. F. Reeves, the energetic secretary of the Toronto branch, and was responded to by Mr. W. A. Emory, the president of the Provincial association, who favored a sliding tariff or a closed season; by Mr. H. B. Cowan, the secretary, and by Mr. Mr. Thos. Delworth, who advised the growers to stand by the association, and to strive to improve themselves in every way possible.

The toast to the Ontario Legislature was responded to by the Hon. Nelson Monteith, who drew forth applause by announcing that the Government is giving serious consideration to a proposal to establish an experimental station in some section where conditions are more congenial to vegetable growing than they are at Guelph. Hon. J. W. St. John said that co-operation, loyalty and unity would do much to benefit producers and consumers. They should learn to stand up for fair prices, as well as to demand duty against the imported goods. The only solution to the tariff question was in the establishment of a specific duty, and if that cannot be got the Ontario Government should be approached regards appointing an inspector who would have power to reject undesirable importations.

Other speakers included Messrs. Geo. Syme, sr., reeve of York township; G. S. Henry, Jos. Rush, Herman Simmers and T. Rennie.

A Heavy Fine for False Packing

The maximum penalty for infraction of the Fruit Marks Act was imposed on Mr. Jas. Coyle, of Colborne, by Magistrate O'Rourke of Trenton, on January 18. He was fined $50 and costs, and in default of payment imprisonment for 30 days in the common jail at Belleville. The charge, laid by Robert J. Rutherford, Inspector of the Fruit Division of the Department of Agriculture, was that the defendant, on Dec. 28,1905, in violation of Section 6 of the Fruit Marks Act, did have in his possession for sale 50 barrels of apples marked XXX that were below the standard, and that these apples were not XXX standard as required by the Act.

Mr. P. J. Carey, Fruit Inspector, testified to visiting the cold-storage warehouse in Trenton, in company with Inspector Rutherford, and finding a shipment of apples of the Stark variety being packed. They examined eight barrels that were marked XXX, and found the apples contained therein were not up to the standard prescribed; a large percentage of the fruit was inferior, being infected with scab, lacking in color, worm-eaten, and too small. On being asked if the general pack was similar to the barrels examined, Mr. Coyle admitted they were a poor lot, and signed a document stating that 50 barrels contained apples similar to some shown by Mr. Carey.

Mr. Robert Coyle, who had charge of the packing, in defence, said:

"Neither Mr. Carey nor Mr. Rutherford showed him an apple that was condemned, any more than one or two which were bruised by pressing; in fact, they did not go down in the barrel at all, and did not say anything about 'size,' 'off-color,' or 'worm-eaten.' In his presence the inspectors only looked into the 'tail,' and did not go farther into the barrel; they did not say anything about shipping the apples or offer any objections to their shipment, and he had not heard anything further about it until the summons was issued. The apples sold for $3.56 per barrel by auction on a declining market in England to-day."

The chief of the fruit division, Mr. A. McNeill, asked for the maximum penalty, and said that the man who deliberately marked packages falsely committed a crime against society, which affected every apple-grower in the country. The false packer, to gain 50 cents a barrel here, caused a loss of $2.00 to $3.00 to the English merchant. Mr. F. C. Morrow pleaded guilty to a similar charge in respect to five barrels, and was fined five dollars and costs.

Your magazine during the last few months has shown a decided improvement in the articles appearing therein. We can see no reason why it should not stand at the very front of all the horticultural magazines published on this continent.—Brown Brothers Company, Ltd., Brown's Nurseries, Ont.

Make Your Work Show in the Garden

The user of Iron Age Tools can show most results for work performed, whether at the end of the day or the end of the season. Wonderful ease and rapidity of operation, with wide range of adaptability, insures best results from every soil and crop.

IRON AGE Implements

The No. 6 Combined Tool is almost a complete tool-house in itself. A simple change of parts and with the same pair of handles you can open the ground, sow seed, roll, rake, weed, hoe, cultivate. Our **New Iron Age Book** describes not only this but many other farm and garden implements. Orchard Cultivators, Sprayers, Horse Hoes, Fertilizer Distributors, Hill and Drill Seeders, Potato Planters, Potato Diggers and Riding Cultivators. This book is **FREE.** Send for it.

No. 6 Iron Age Combined Double and Single Wheel Hoe, Hill and Drill Seeder

No. 6, Sowing Seed

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Or J. A. SIMMERS, Toronto, Ont., Canada

New Crimson Red Canna

DID YOU SEE EXHIBITED AT ST. LOUIS THE NEW CRIMSON RED CANNA

Mrs. Wm. F. Kasting?

Height, 3½ feet. Most brilliant in color, most prolific of all Red Cannas. Blooms all the time, and is exceptionally fine for conservatory decorations. You will need it in your business. Awarded, on its merits, a GOLD MEDAL at the World's Fair, 1904.

West Seneca, N.Y., U. S. A., Sept. 15, 1904.

Mr. Wm. F. Kasting,

Dear Sir—In our trial grounds this year, the Canna, Mrs. Wm. F. Kasting, was by far the best of its class; both in richness of coloring and in freedom of bloom. It has been a sheet of dazzling crimson from June up to the present time and promises to be good for a month to come. I consider it a most valuable acquisition and shall need a large bed of it next year. Respectfully, JOHN F. COWELL.

Prices for Bulbs, $2.00 per Dozen $15.00 per Hundred $100.00 per Thousand Delivery now up to April

WM. F. KASTING 383-387 ELLICOTT STREET BUFFALO, NEW YORK

GERHARD HEINTZMAN PIANOS

¶ All the work in the world is directly and immediately undertaken for the maintenance and betterment of the home. Musically, no refined home is complete without Canada's best piano

The Gerhard Heintzman

which can be purchased on easy terms and will prove much the cheaper piano in the end.

¶ Have you seen the wonderful self-player, the "Apollo"? Anyone can play it. Send for catalogue and printed matter.

GERHARD HEINTZMAN
LIMITED
97 YONGE STREET, TORONTO
Hamilton Warerooms—127 King Street East

ATTENTION!

IF you intend purchasing any Trees, Vines, Shrubs, Roses, or Ornamentals the coming Spring, it will pay you to submit list of wants for special prices, as I have a complete assortment of Nursery Stock for delivery this Spring, especially Apples, Pears, Plums and Ornamentals.

Quality and Prices Right

Agents Wanted Outfit Free

C. W. F. CARPENTER

WINONA, ONTARIO

Nurseries:
WINONA GRIMSBY BEAMSVILLE

Money Given Free to People who buy Goods from Advertisers in this Issue. See Notice in Advertising Columns.

POULTRY DEPT.

Conducted by
S. Short, Ottawa

FEBRUARY is the most trying month of winter for the fowls. They begin to find the limited space of the winter quarters irksome. The floor litter should be changed frequently, say once a fortnight. The windows of the pens should be cleaned to admit as much light and sunshine as possible. Keep the grit boxes filled. Study the birds with a view to making up this season's breeding pens if they are not already made up. Dispose of all extra or surplus males. If thoroughbreds are not kept, try and make provision or arrangements to introduce them.

Good pure bred breeding birds may be purchased for five dollars a trio in nearly every neighborhood. Try and see personally the birds before buying. Do not go across the border for them, but encourage Canadian breeders. Two expert breeders who visited Guelph and Madison Square poultry shows recently held, declare the quality of the stock shown at Guelph to be equal to that shown at the Madison Square Gardens. Five dollars is a reasonable price for a trio as I will endeavor to show in the next issue of this magazine.

With regard to which breed to keep, that depends on individual preferences. Apparently white Wyandottes are the most popular fowl in Ontario, for they were the largest class exhibited at Guelph. At Madison Square barred Plymouth Rocks headed the list, with white Wyandottes and white Leghorns next in order. This may assist in deciding the question, for breeders both in Canada and the United States keep fowl more for profit than pleasure.

VENTILATION.

Last month something about ventilation was promised for this issue. With this end in view six of the most prominent poultry plants in and about Ottawa were visited in January—and data collected. No definite conclusions were arrived at and I will relate the conditions of each and let the readers judge for themselves. The first house visited was situated on the brow of a hill with southern exposure. There were three pens of fowl. The first pen contained 46 white Leghorns, hens and pullets. They were laying on the average 20 eggs a day. They looked in first-class condition. The next pen, a small one, contained 15 May hatched Plymouth Rock pullets. They were laying an average of six eggs a day. The third pen was in a loft over the other two. The poorest birds, that is the culls, were kept upstairs to the number of 50, and laid on an average eight eggs a day. The owner said that he had never been able to get really good results from birds kept upstairs so he had put up the least promising stock in this loft. The house was comfortable and I was told that the temperature never went below freezing point. There was a stove in this house and when the weather was cold a fire was lighted to keep the temperature up, and no trouble had been experienced with dampness for the frost did not collect on the walls unless the thermometer went below freezing point. The owner of this establishment is making money. The next house visited contained 20 white Wyandotte pullets, some of them winners of the best prizes at Ottawa last fall. They were all laying, and had been averaging 12 to 13 eggs daily. They were housed well. Last winter moisture collected very heavily on the inside walls of this house, and some sickness was the result. This winter two panes of glass, one upper and one lower, were broken out and cotton stretched across the openings. There has been no moisture so far, but as this has been an unusually mild season the owner could not say yet whether or not the cotton ventilators would prove a decided success. These birds were more than paying expenses.

The next place visited contained three pens—one contained about 30 hens, white Leghorn and barred Rocks, half of each. The Leghorns were laying, the Rocks were not, although they looked well. Six to seven eggs daily were got from this pen. The next pen contained about 40 half-bred Orpingtons. These were well fed and in good condition. No eggs were laid at the time of visiting. The next pen was in a loft over the other two and contained about 40 white Leghorn and barred Rock pullets, half of each. Three to four Rock eggs were laid daily in this pen. No artificial heat was used in this building. The windows were single and the building not warm, and an occasional crack in the walls let the daylight through. The fowls were fed well and much the same as those mentioned above but were not paying expenses.

Of the other places visited two of the buildings were heated and the hens were laying well, and returning a profit. The last building was not heated artificially, and the fowl were barely paying expenses. From these visits and from conversations with other breeders the evidence adduced is in favor of heating the houses artificially, just sufficient to keep the temperature above freezing point. Under such conditions the best results have been obtained in this district.

SAVE YOUR TREES from the Ravages of SAN JOSE, COTTONY MAPLE SCALE, PSYLLA, Etc.

All you need — is — Scalecide Water AND A GOOD SPRAY PUMP

SIMPLE, MORE EFFECTIVE and CHEAPER than LIME, SULPHUR and SALT

Mr. A. N. Brown of Wyoming, Del., writes—"*You have conferred a boon on the American Fruit Grower.*"

For Samples, Testimonials and Prices Address

B. G. PRATT CO.
11 Broadway, New York, N.Y.

THE SPRAMOTOR CO.
London, Ontario, Canadian Agents

Creighton Poultry Yards
OTTAWA, ONTARIO

Have won First Honors on Barred Plymouth Rocks for the last ten years under judges such as Jarvis, Cosh, Bennett and Butterfield.

A few good Breeding Pullets to spare at $2.00 each. In White Wyandottes we have several fine Cockerels at $2.00 each—good value. Eggs in season from both breeds at $2.00 per 13. Utility stock at $1.00 per 13.

S. SHORT, Proprietor

CANADA'S GREATEST NURSERIES
Offer Four New Specialties for Spring, 1906

Why plant OLD varieties when the NEW will produce DOUBLE QUANTITY, BETTER QUALITY and BRING HIGHEST PRICES?

THE MAYNARD PLUM
Mr. Luther Burbank's greatest plum. In the Maynard we believe Mr. Burbank has reached the point of perfection.

IDEAL ASPARAGUS
A new mammoth French Asparagus. Early. Largest size and most productive. A bunch of 20 stalks weighs 2 lbs. Strong 3 yr. old plants.

GOLD COIN POTATO
Tested at Experimental Station, Ottawa, and produced 554 bushels to the acre. Best showing made out of seventy-five varieties tested. Free from Blight and Rot.

NEW MILLER RASPBERRY
Earlier than Marlboro. Continues a long season. Fruit large, bright red, best quality and exceedingly firm. Canes vigorous and hardy. Order at once as supply is limited.

Send for full particulars and special circulars fully describing the merits of these New Specialties.

Why not put your spare time to profit this winter in selling these specialties and other high-class nursery stock in Fruits and Ornamentals? Liberal inducements. Write for terms. See reading notice on page 49

STONE & WELLINGTON
Fonthill Nurseries, over 800 acres. TORONTO, ONTARIO

John B. Smith & Sons
Limited
Cor. Strachan and Wellington Aves.
TORONTO

JOHN B. SMITH & SONS. LIMITED. TORONTO
SASH BAR & ALL WOODWORK. FOR GREENHOUSE CONSTRUCTION

Manufacturers . . of . .
LUMBER
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DOORS,
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BLINDS,
SILOS, ETC.

Clear Cypress for Greenhouse Work

A Handsome Premium will be Given Free to all Readers who buy Goods from Advertisers.

STRAWBERRY Plants For Sale

Every garden should have an extra early and extra late variety to expand the season of fruiting to its full limits.

SPECIAL OFFER—60 early and 60 late plants sent postpaid to any address for $1.00.

Attractive prices on thousand lots of Haverland, Parker, Earl, and Williams. TERMS cash with order.

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who purchase goods from advertisers and say they saw their advertisement in "The Canadian Horticulturist. Five Dollars to the purchaser to the greatest value; One Dollar to each of the next five making application.

Write the Advertising Manager of

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MARCHMENT'S
Sure Growth
COMPOST

Supplied to all the largest nurserymen and fruit growers in Ontario. Shipments made by car or boat. Prices reasonable.

S. W. MARCHMENT
105 VICTORIA ST., TORONTO
Telephone Main 2841 Residence Park 951

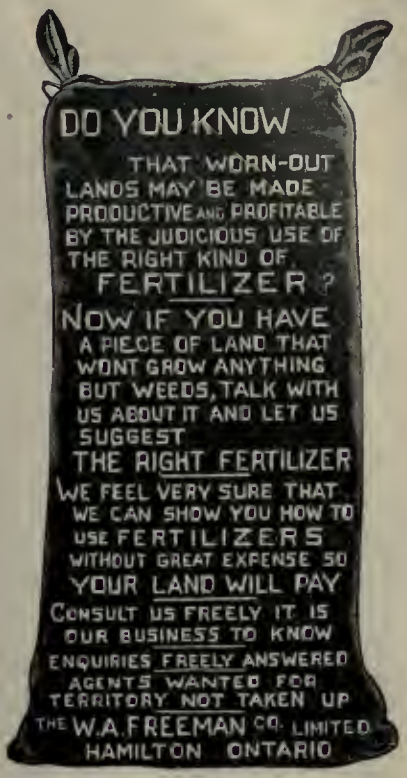
New Catalogs

The catalog recently published by Brown Brothers Company of Brown's Nurseries, Welland County, is a credit to that enterprising company and to the whole Dominion. As a work of art in the line of catalogs it is par excellence the finest THE HORTICULTURIST has ever received from any firm in Canada or the United States. Every page is decked with a richly colored plate illustrating as true to nature as possible, some variety or varieties of fruit, vegetables or flowers. The quality, season of usefulness or beauty, and general characteristics are concisely given for each specimen. This firm has long had a reputation for supplying good nursery stock, and now it stands alone in the quality of the catalog distributed among the fruit growers of Canada. This catalog is worth securing and preserving.

The catalog issued by E. D. Smith, of the Helderleigh Nurseries, at Winona, gives a full description of the leading varieties of fruit and ornamental trees, shrubs, vines, etc. Perfect system is found in all the work connected with growing and storing the stock, and so sure is Mr. Smith that the trees are true to name that he agrees to replace all stock found to be not genuine. The nursery land is given manure to the value of $50 per acre, so that healthy, straight trees are grown. The long growing season that nature affords south of the lake and below the mountain and the accompanying absence of low temperatures remove all danger of black-hearted trees, as the wood is matured before winter sets in. Those interested should secure a catalog.

The new catalog and circulars being sent out by Stone & Wellington, of Toronto, of the Fonthill Nurseries, show that much is being done in bringing out new varieties of the different lines of fruit, flowers and vegetables. In their experimental orchards over 600 varieties of apples are being tested. This firm is to be complimented on their enterprise in securing such

Mortgage Lifting
FERTILIZERS



IT PAYS TO BUY THE BEST
And the Best is None too Good for You

Canadian Grown Trees for Canadian Growers of Fruit

¶From the time the scions are taken, until the trees are shipped, they receive the personal attention which make our trees famous.

¶We guarantee our trees to be free from disease of any kind.

¶Place your order now for Fruit and Ornamental Trees and Shrubs.

¶A large supply of the choicest varieties to select from.

¶Our Catalogue is free for the asking.

THE HELDERLEIGH NURSERIES
E. D. SMITH - WINONA, ONT.

specimens as the Maynard plum, the Ideal asparagus, and the Gold Coin potato. In apples they have introduced such varieties as Milwaukee, Macdonald and Scarlet Pippin. In small fruits they are offering a fine collection, consisting of the King raspberry, Cumberland black raspberry, Boskoop Giant black currant, Perfection red currant, Rathbun black kerry, and Victoria gooseberry. Their line of shrubs and herbaceous plants also is complete.

Mr. J. A. Simmers' catalog contains a complete list of garden and vegetable seeds, bulbs, etc., for the city and suburban gardener. The seeds from this firm are noted for their high standard of excellence, and those engaged in agriculture would do well to secure one of these catalogs before purchasing their seeds for spring sowing. The firm was established in 1856, and by honest and square dealing an extensive trade has been worked up. Besides seeds and bulbs, garden tools, bee keepers' supplies and other sundries are kept in stock. Its goods are shipped to all parts of Canada.

The Steele, Briggs Seed Co.'s 1906 catalog of seeds, bulbs and plants, showing what to grow and how to grow them, is replete with information. The business at Hamilton, formerly known as the Robt. Evans Seed Co., will in future be under the firm name of Steele, Briggs Seed Co., Limited. A cordial invitation is extended to all to visit their fine greenhouses and trial grounds on Queen Street East, Toronto. The warehouses and offices in Toronto contain nearly five acres of floor space, and are equipped with the latest and most improved cleaning mills, printing presses and all appliances necessary for economical work in connection with the extensive business carried. In addition to the Toronto and Hamilton offices, a flourishing store has been established at Winnipeg. A special price list for market gardeners and florists, containing the varieties in special demand, has been published.

Wm. Rennie & Sons' new catalog should be in the hands of every agriculturist in Canada. It gives a full description, with illustrations, of the best varieties of plants known to the horticulturist or general farmer. All orders for plants, bulbs, etc., are sent direct from this firm's greenhouse at Swansea, where tender plants can be held over until danger of frost is past. They are always in touch with a list of gardeners who are seeking situations, and will at any time be pleased to assist their customers in obtaining reliable help.

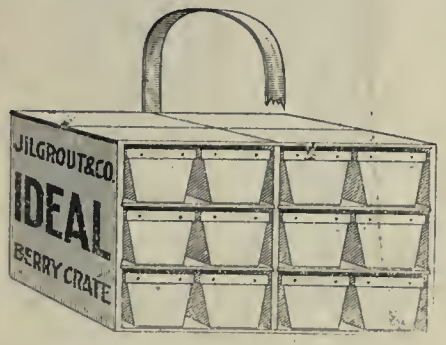
The 26th annual catalog of the firm of A. G. Hull & Sons, of St. Catharines, shows that this firm has a first-class stock of all fruit, forest, ornamental and evergreen trees, shrubs, roses, grape-vines and berry plants. It has a reputation for supplying excellent stock. The nurseries are inspected regularly by the Dominion inspector, so that clean healthy stock may be ensured. All shipments are fumigated before they leave the place. Messrs. Hull have, perhaps, the best catalog business in Canada.

The celebrated strawberry plants supplied by Mr. W. H. Vanderburg, of Poplar Hill, Ont.,

If You Want Your Fruit

to look well, carry well, and sell well, you need the best

PACKAGES



I make them and can satisfy you

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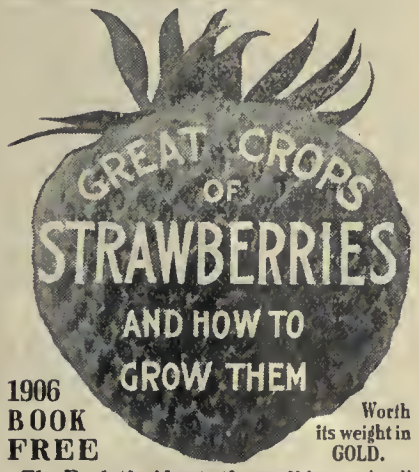
Manufacturer of Berry and Plant Boxes, Berry Crates, the Climax Peach and Grape Baskets, etc.



1906 BOOK FREE

Worth its weight in GOLD.

The Book that beats them all because it tells how **big crops of big fancy strawberries** can be grown every year and how to pick and pack them for big prices. It keeps Experienced Growers posted on new discoveries in plant breeding and latest cultural methods. It takes beginners through a complete course of instruction; tells just when and how to do everything to get **Big Results**, and how to start a Profitable Berry Farm with little capital. Beautifully illustrated with photo-engravings. Don't order your plants until you **read this book. It is free.**

R. M. KELLOGG CO., BOX 570 THREE RIVERS, MICH.

FLOWER POTS

Now is the time to order them for Spring trade. We have a large stock of all sizes on hand and can make prompt shipments.

Drop us a post card for Catalogue and Price List.

THE FOSTER POTTERY CO.
Limited
MAIN STREET WEST HAMILTON

PERMANENT meadows should have an annual dressing of 500 pounds per acre of a fertilizer containing eleven per cent. Potash and ten per cent. available phosphoric acid.

This will gradually force out sour grasses and mosses from the meadows, and bring good grasses and clovers; thus increasing the quality as well as the quantity of the hay.

Our practical book, "Farmer's Guide," gives valuable facts for every sort of crop-raising. It is one of a number of books on successful fertilization which we send on request, free of any cost or obligation, to any farmer who will write us for them.

Address, GERMAN KALI WORKS,
93 Nassau Street, New York.

A beautiful colored plate of our
New Eaton
Red Raspberry
and our strawberry catalog of valuable information about varieties with instructions for beginners. Free to all.
THE FLANSBURGH & POTTER CO.,
Leslie, Michigan.

Farm Fruit, Stock or Grain

I will sell or exchange my general store and stock for a small farm suitably situated. I am doing a good business here—farm implement trade growing. Good reasons for selling.

C. B. REECE, North Pelham, Ont.

STRAWBERRY PLANTS
"CARDINAL"
("THE IDEAL")

A limited number of Cardinal plants for sale. Also Victor, Commonwealth, North Shore, Early Hathaway, New Home, Superior, Mrs. Fisher, Wonder, Ben Davis, and 80 others. Young plants, fair prices.

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PONSONBY ——— ONTARIO

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We are Headquarters for all kinds of Splint Baskets

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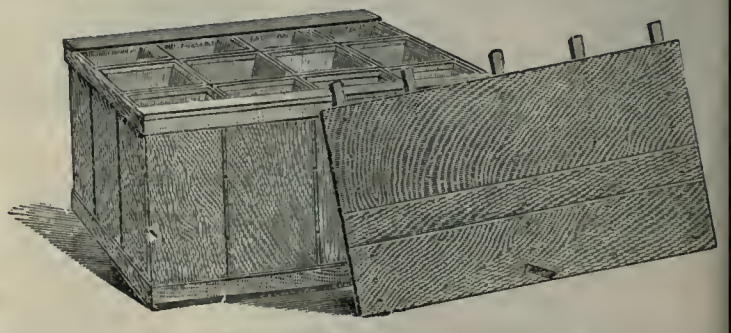
supplied for the protection of trees from mice during winter

FRUIT PACKAGES
A Specialty
SEND FOR OUR PRICES

THE OAKVILLE BASKET CO.
OAKVILLE, ONTARIO



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THE
HERBERT RASPBERRY

THE EARLIEST, HARDIEST FINEST FLAVORED, MOST PRODUCTIVE AND LARGEST RED RASPBERRY

Originated by R. B. Whyte, prominent Horticulturist of Ottawa

From all quarters come favorable record of the Herbert's good qualities.

NORTH

F. Theaker, Hanbury, Temiskaming district, writes: "Now for the Herbert Raspberry. It is the largest in size, and the finest in flavor of any red raspberry I have ever seen or tasted. It is a great yielder, a vigorous grower, and as hardy as the wild berry of this country. There is no need to protect the canes here, for there was no killing back whatever. The canes were alive to the very tips in the spring."

EAST

W. W. Dunlop, Outremont, Que.: "I have fruited the Herbert Raspberry here, having purchased a few of the plants from Mr. Whyte before he sold to you, and am very well pleased with it. Unlike most of the novelties introduced, it has so far shown most of the good points claimed for it."

The Herbert is highly spoken of in several reports issued by the Central Experimental Farm, Ottawa.

SOUTH

The National Nurseryman, Rochester, N.Y., in its issue of October, 1905, says: "Keep your eye on the Herbert Raspberry. The editor of *The Nurserymen* has known it for a number of years, and his experience with it has impressed him very favorably."

WEST

A. E. Sherrington, of Walkerton (in December *Horticulturist*) says that during the past season the Herbert has given excellent results. The first fruit was picked July 17th and the last August 11th. In that time 565 ounces were picked from a 20 ft. row. The quality was fine, and it has proved to be a good shipper. (Mr. Sherrington, like Mr. Dunlop, wants more of the plants.)

Each 40c.; Dozen $4; 100, $25; Half Dozen and Half Hundred at Dozen and Hundred Prices

The Renfrew Nurseries Co. LIMITED

RENFREW, ONT.

J. K. ROCHESTER, *President* — W. E. SMALLFIELD, *Vice-Pres. and Sec.*

are fully described in his seventh annual catalog, which is just out. Mr. Vanderburg began raising strawberry plants for sale about seven years ago because he recognized how difficult it was to obtain varieties true to name, because there were no growers in Canada supplying the leading varieties in quantity. The growth of his business during the past few years is sufficient guarantee that his stock is good and prices right.

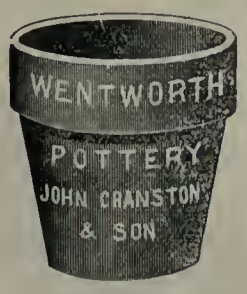
Some 21 years ago Mr. Allen, of the firm W. F. Allen, of Maryland, began business in a very small way and issued a small four-page circular. The new circular for the season of 1906 gives some idea of the development this firm has made. The new catalog includes a full description of the leading varieties of strawberries, including Cardinal, Advance, Chesapeake, Gandy, Bederwood, Buhach, and numerous other standard varieties. A fine collection of dewberries, raspberries, currants, gooseberries, grapes, asparagus, and all the vegetable crops are fully described and well illustrated.

Transportation Rates

The committee of the Ont. F. G. A. in charge of the problem connected with transportation took steps at the meeting held at the Rossin House, Toronto, on Jan. 16, to obtain better transportation facilities for the coming season. Delegates to the Dominion Conference, which is to be held in Ottawa, will be instructed to arrange for deputations to wait on the Railway Commission and ask for a reduction in rates on apples. It is felt that barrels should be accepted at a fixed weight of 150 pounds, and that railways should be required to provide cars equal to the best now used in America.

The Railway Commission will be requested to pass an order compelling the railways to furnish shippers of perishable goods information each day as to where the car is located, and that a time limit of at least 12 miles an hour should be enforced regarding the shipping of this commodity. The Dominion Government will be approached with the view also of having express rates placed in control of the Railway Commission, as owing to present arrangements exorbitant rates are charged by the express companies.

Owing to the profit that can be derived from the shipping of cull fruit to Europe during seasons



WENTWORTH POTTERY

Standard Flower Pots, Fern Pans Hanging Baskets. Cut Flower Jars and all Florists' Supplies.

Mail Orders given Prompt Attention.

John Cranston & Son
HAMILTON, CANADA

Special Glass for Greenhouses

GOOD QUALITY, FLAT, EVEN THICKNESS AND WELL CUT

PLATE
MIRROR PLATE
WIRE GLASS
PRISMATIC GLASS

And all other kinds of Glass used for building purposes

Pilkington Brothers Limited
MONTREAL TORONTO
VANCOUVER WINNIPEG

THE UNDERWOOD

The Underwood

"Tried and True." Don't take our word for it. We are prejudiced. We can show you the Underwood, how it works and what it will do, but for the Most Convincing Argument you will have to ask any of the 5,500 users in Canada.

More Underwood Typewriters are in use in Canada than all other makes Combined.

We carry a large stock of rebuilt typewriters at very low prices. Send for Catalogue and List.

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UNITED TYPEWRITER CO. LIMITED
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TWO GREAT DISCOVERIES

Nitrogen Culture

or NITROGEN COLLECTING BACTERIA

For inoculating the seeds of the Clovers, Alfalfa, Peas, Beans, and other Pod Bearing varieties. These bacteria collect nitrogen from the atmosphere and deposit it in the soil.

THE GREAT SOIL ENRICHER

Just the thing for Pea, Bean and Alsike Clover growers of Canada. Dr. Cowles, Ph.D., of Johns Hopkins University, collaborating with U.S. Dept. of Agriculture, has charge of the scientific part of the work.

KIL-O-SCALE

The Great San Jose Scale Destroyer

No Cooking. Non-Corrosive. No Sediment to Clog the Nozzle.

Write for Circular and Prices

Write for Circular and Prices — GRIFFITH & TURNER CO. 217 N. PACA STREET BALTIMORE, Md., U.S.A

OUR CATALOGUE
opens with a triumphant arch made up of over 40 varieties of vegetables the world has learned to value, and of which we were the original introducers. It has some both new and good for this season, and a vast variety of standard vegetable and flower seed, with intelligent instructions for the cultivating of all of them. Catalogue FREE.
J. J. H. GREGORY & SON
Marblehead, Mass.

GREGORY'S SEED CATALOGUE FOR 1906

GET OUR CATALOGUE OF
RUBBER STAMPS
AND STENCILS
THE SUPERIOR MFG. CO.
68 ADELAIDE ST. W. TORONTO.

Money Makers for Someone
We have some excellent devices, fully covered by Canada patents, that are for sale. Some would make excellent patent-right sellers. Others are just what many of our manufacturers need.
WRITE FOR CATALOGUE
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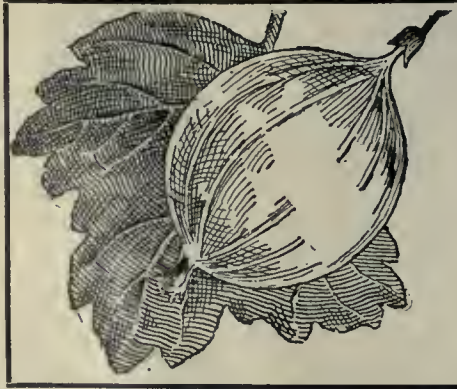

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The Canadian Horticulturist

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Development of Spraying Operations

IN no department of orchard operations has the advancement of recent years been so noticeable as in spraying. Constant progress from the small knapsack to the crude barrel pump worked by hand, and from the hand pump attached to the barrel to the various power devices of present-day use has been evident in all fruit sections. Although ridiculed by many when first taken up, spraying has become recognized by the more progressive growers as one of the elements which enter into successful orcharding. Its advantages have become so clear to the fruit men that now it holds a place along with cultivation, fertilizing, pruning and other cardinal operations on the up-to-date fruit farm.

Those who ridicule the practice of spraying are becoming fewer year by year. Now and then an unprogressive grower chances to have a good crop of fruit, although he never sprayed. This is held up by himself and a few neighbors who do nothing until forced, as a straight proof that spraying is not required. Or, perhaps, a thrifty fruit grower decides that he will spray his trees. Careful and thorough spraying at frequent intervals during the summer season is done, but when the crop is harvested he has no greater yield than a neighbor who went to no bother and no expense in carrying on spraying operations. Again the unprogressive fellow has a chance and spraying is pronounced "no good."

To the orchardist who reads and studies, however, such isolated cases are not taken into serious consideration. Because the grower's dwelling and fruit sheds are not burned each year, is that any reason why he should not insure his buildings? The same argument holds good in regard to spraying. Importations of nursery stock and fruits have resulted in the introduction into Canadian fruit sections of so many injurious insect and fungous pests, that it has come to be realized that scientific and thorough spraying each year is essential to success. It may be that weather conditions are unfavorable to the development of these enemies to fruit production for a season, and the man who sprays none may reap as great a harvest as the one who attends to his trees regularly; but for certain returns year after year the man who sprays is the man who wins. Did any of those cranks who maintain that spraying is a useless innovation in fruit culture, ever consider that the man in his section who sprays most scientifically and most persistently, provided other essential orchard operations are given due attention, is in the front rank of the growers? He is making money and increasing his fruit plantations almost every year. Competition on the various fruit markets is becoming so keen that it does not pay to ship inferior fruit. Experience has shown that number one fruit cannot be guaranteed if the trees are not sprayed. Some may say spraying is no guarantee. However, the experiences of leading growers has proved that if it is done intelligently, the one who practises it never regrets the time and labor given to the work.

To answer the question, Does spraying pay? the experiences of some leading fruit growers may be cited. Mr. D. Johnson, president of the Forest Fruit Growers' Association, in a letter to THE CANADIAN HORTICULTURIST, said: "After almost 12 years' experience, I have great confidence in spraying. Previously my apple orchard was producing only 300 to 400 barrels a year. Although the orchard was cultivated and fertilized just as well then as it is now, the fruit would not set properly, and that which did set and come to maturity was often so defective with scab and worm as to be of little value. I determined to try spraying with Bordeaux mixture and Paris green and to give it a thorough test. So successful was the test, the orchard in a few years was producing 1,500 to 1,800 barrels a year, the greater part of which were XXX in quality. Some varieties, such as Spitzenburg and Snows, that at one time seemed beyond redemption, are producing excellent fruit perfectly free from scab or worm.

"My experience in spraying plums, pears, peaches and grapes has been equally successful, and has produced most astonishing results. Some years ago I lost the entire plum crop, with the exception of about 35 bushels, from the Black Rot. The next season I sprayed with Bordeaux mixture, and although the Black Rot was as prevalent, I harvested over 1,000 bushels. The Black Rot fungus is always with us, but I have little difficulty in keeping it in check with the Bordeaux mixture. I use the strongest barrel pump I can get, with an elevated platform for the spray operator to stand on. I usually spend 12 to 14 weeks each season spraying."

Another illustration of the value of power spraying was evidenced during the past season in the orchard of Mr. A. C. Cummins, of Burlington. Regarding this orchard, Mr. A. B. Cutting, travelling representative of THE HORTICULTURIST, writes: "Perhaps the finest lot of Spy apples grown in this locality during the past season came from Mr. Cummins' orchard. Of the total crop the buyers say that 75 to 80 per cent. were XXX stock, and less than five per cent. culls. This is an exceptionally good record, and is due, as Mr. Cummins says, to persistent and thorough spraying. Three years ago in this orchard, when spraying was not practised, only 10 barrels of XXX apples were found in a total crop of 1,500 barrels.

"A very marked comparison of the merits of spraying vs. non-spraying was seen in this same orchard last season in the case of a single Spy tree standing in a raspberry patch where it could not be reached with the sprayer. Surrounding the raspberry patch are the trees that gave the good results mentioned. The lone, untreated specimen in the patch produced an excellent crop of Codling Moths and scabs, with little or nothing else. The single unsprayed tree was diseased and attacked by insects; the sprayed orchard, only 50 feet away, was clean."

The excellent results obtained by growers in various states of the Union were referred to by Mr. A. N. Brown, of Wyoming, Delaware, in an address at the annual convention of the Ontario Fruit Growers' Association held in Toronto last November. Mr. Brown pointed out the absolute necessity of having a first-class power outfit and only the best nozzles, so that a perfect mist would be given. He said that experience had shown the growers that

intelligent and perfect spraying gives perfect fruit. He cited a case where a grape grower sprayed four times with Bordeaux mixture and had with some varieties 99 per cent. perfect fruit, despite adverse conditions. Other varieties averaged 94 to 92 per cent perfect. Several owners of large vineyards in the same section did not spray, and had not a single pound fit for market.

Direct results of this nature have been obtained by the leading growers in all sections. Scores of other cases could be mentioned by THE HORTICULTURIST. Those growers who have undertaken spraying most extensively, provided intelligence was combined with the work, realize the benefits and the returns in dollars and cents. Insect pests and fungous diseases must be combatted. It is then the part of the grower to study the method of procedure which would best suit his conditions.

Fruit Enemies and Their Treatment

MANY fruit growers with good intentions are disgusted with spraying each year because they do not know what spraying mixture to use, nor when to apply it. Bordeaux mixture is recognized as the standard for general orchard use, but there are pests on which this mixture has no effect. Every grower has not the time nor the opportunity to study insect life, but very little investigation regarding these enemies is necessary to distinguish between the forms that are destroyed by certain classes of spraying mixtures.

A study of insect life has revealed the fact that as far as injury to plant growth from insects is concerned there are two main classes—those that eat the vegetable tissue and those which suck the juices without destroying the tissue proper. The former class, to which belong the Potato Beetle, the larvæ of the Codling Moth, and numerous other forms, can readily be destroyed by Paris green or some such poison. To the class of sucking insects belong the scale insects, aphids or plant lice, and various other forms. Since these do not eat the tissue they must be destroyed by some means other than poisoning. Some caustic preparation that injures the body must be applied. For years kerosene emulsion was the standard but many commercial mixtures, including Scalecide, Kiloscale and such preparations are recommended by prominent fruit growers as being effective and cheap. Powder preparations, too, such as hellebore, are effective because they get into the breathing pores and so destroy the pest. The Lime Sulphur wash has become popular in many sections and is by many claimed to be the standard treatment for scale insects.

Then there are the fungous and the bacterial diseases. The former include such well-known troubles as Apple Scab, Black Knot, Mildew, Black Rot, and kindred diseases. These are readily destroyed by such fungicidal mixtures as Bordeaux mixture or ammonia copper carbonate, if treated thoroughly and at the proper time. The bacterial diseases comprise Peach Yellows, Pear Blight, several rots commonly found in vegetables, and many other troubles. They are the most difficult enemies to combat. Prevention is better than cure. Care should be taken to discard varieties that are most susceptible to the diseases and every trace should be removed and burned as soon as it is noticed. If the soil becomes infested with the germs that produce a certain trouble, it takes years to remove them.

A careful consideration of these classes of pests shows that the Paris green and bordeaux mixture merits the place it holds as a standard material for spraying. The Paris green plays havoc with insects which eat the tissue, while the Bordeaux mixture destroys fungous forms. The mixture used, however, must be regulated by the pests that are present and the sooner growers disabuse their minds of the idea that Bordeaux-Paris green mixture is the cure all for the orchard the better for them. Any quantity of it would never eradicate San Jose Scale. Likewise, the most effective treatment for San Jose Scales and other would be useless on combatting insect forms which eat.

Labor is scarce and some spraying mixtures expensive. It is, then, important that the grower make a careful study of the troubles with which he has to contend, and that he apply the proper mixture in whatever way is best suited to his conditions. As a general rule those who have made a study of fighting insects and fungi recommend about five sprayings in a season. This rule, however, does not hold good in every case.

In an interview secured by a representative of THE CANADIAN HORTICULTURIST with Mr. J. C. Harris, of Ingersoll, Mr. Harris said: "Spraying must be done according to the season. If done thoroughly, four times is usually enough. Considerable difficulty is frequently experienced in giving the first application in the spring because the ground is so soft. On the average 80 or 90 per cent. of the fruit is free from blemish if the trees receive four or five applications of the Bordeaux-Paris green mixture.

After carefully studying orchard and garden pests, and the best methods of combatting them Prof. W. Lochhead, of the Ontario Agricultural College, prepared a spray calendar showing the preparation of the various spraying mixtures, the mixture most effective in destroying the common pests and the dates at which applications should be given in each case. This information has been published in bulletin 122.

In fighting leaf-eating insects and fungous diseases that attack the apple and the pear, Prof. Lochhead recommends Paris green and water (Paris green 1 lb.; water, 150 gals.; freshly slacked lime, 2 lbs.), just as the leaf buds are expanding, to destroy bud-moths and case-bearers. About a week later Bordeaux mixture and Paris green (blue stone, 4 lbs.; lime, 4 lbs.; Paris green, 4 oz.; water, 40 gals.) is required for bud-moths, case-bearers, canker-worms and tent-caterpillars as well as scab, leaf spot and mildew. Three subsequent sprayings with Bordeaux and Paris green are recommended one just before the blossoms open for canker-worms, tent-caterpillars, etc., as well as for such fungi as scab and leaf spot; one just after the blossoms fall for Bodling Moth, canker-worms, tent-caterpillars, pear slugs, scab and leaf spot; and one 10 days or two weeks later for Codling Moth, Palmer worm apple Bucculatrix, scab, leaf spot, etc.

For sucking insects on the apple and pear kerosene emulsion, whale oil soap, or lime wash are recommended, for pear-leaf, blister-mite, pear psylla, aphids, oyster shell, bark louse, etc. Applications should be given before the buds open, as the leaves are unfolding, again 10 days later, and about June 1. Professor Lochhead also advises the application of lime wash during winter for these pests.

The following treatment is suggested for the peach orchard: against Peach-leaf Curl, Brown Rot, Curculio and Bud-moth, Bordeaux mixture and Paris green before the flower buds open, after the blossoms fall, and again two weeks later. Besides a spraying with ammonia-copper carbonate (copper carbonate, 1 oz.; strong ammonia, ½ pint or more; and water 10 gals.) is advised after the fruit is well formed. At this season the Bordeaux mixture cannot be used because it spoils the appearance of the fruit. Aphids and scale insects on the peach can be kept in check by the use of kerosene emulsion (soft soap 1 qt., boiling soft water 1 gal., coal oil 2 gals.) diluted one part in 10 of water or whale oil soap one pound in seven gallons of water. Aphids should be treated as soon as they

appear. For San Jose scale, whale oil soap two pounds in one gallon of hot water, or crude petroleum 25 per cent. is recommended in early spring before the buds open.

Enemies of the plum and cherry require much the same treatment to those of the peach. Leaf-eating insects, Curculio, Brown Rot, Shot Hole Fungus, etc., should be subjected to three applications of Bordeaux mixture and Paris green the first when the last buds are opening, the second when the fruit is formed and the third two weeks later—and one spraying with ammonia copper carbonate when the fruit is large. Plant lice and scale insects require treatment similar to that given in the peach orchard.

For the vineyard, four sprayings with Bordeaux mixture and Paris green are advised as follows: One as the buds begin to swell, 10 days or two weeks later, before the blossoms open, just after blossoming, and two weeks later. To prevent later developments of Black Rot and Mildew, Professor Lochhead recommends spraying with ammonia copper carbonate after the fruit is well formed. Thrips and leaf hoppers are destroyed with kerosene emulsion, one part in nine of water, soon after the leaves are formed.

Treatment for the raspberry patch is given as follows: To destroy Anthracnose, Leaf-blight and Saw Fly larvæ, Bordeaux mixture and Paris green before growth begins, and again when the first blossoms open, and Bordeaux mixture when the fruit has been harvested. On currants and gooseberries Bordeaux mixture and Paris green before the buds expand, and again 10 or 15 days later is the best for worms and mildew. The worms can be killed by Paris green alone or by hellebore. Plant lice on these bushes can be effectively treated with kerosene emulsion, whale oil soap, or by dusting with fine wood ashes. Strawberry Rust or Leaf-blight can be controlled by applying Bordeaux mixture at intervals of two or three weeks when it can be applied without disfiguring the fruit.

It must be considered, however, that these are not hard and fast rules for applying these mixtures. If the weather is favorable fewer applications may suffice, but on the other hand if a rain should come almost immediately after spraying the effects would be nullified. The successful sprayer regulates his work by conditions as they exist. Thoroughness is the prime requisite. If the proper mixtures are applied intelligently the results will be satisfactory.

A Grower's Experience with a Power Sprayer*

W. M. Black, Wolfville, N.S.

AMONG the many important points to be considered in the selection of a power sprayer are, cost, ease of operation, economy, draft, accessibility of valves and other working parts, large bearings, stuffing boxes and other matters of minor importance. After giving these various points due consideration, and corresponding with many makers of spraying outfits, I finally decided to purchase a certain machine. The style secured is known as the "Triplex Power Sprayer," and consists of a three-plunger pump, capable of maintaining a pressure of 200 pounds, with, however, a pass valve that allows the pressure to be adjusted as desired.

The pump is supplied with pressure gauge and outlets for four lines of hose. The working parts are of brass or of composition metal, and the stuffing boxes so arranged as to be easily and quickly packed. It is operated by a one and a half horse-power "Fairbanks" four cycle gasoline motor, the speed of which can be regulated by a governor as desired. When adjusted for 50 revolutions a minute it consumes one pint of gasoline per hour.

In operating this outfit I used two lines of hose with six vermorel nozzles on each line. Another line of hose was run from the pump to the bottom of the cask and fitted with a two outlet Bordeaux nozzle adjusted for a coarse spray. This was for use as an agitator and worked in a most satisfactory manner, keeping the solution in active motion at all times. When first operated I used one of the common half-round tanks with agitator worked by hand, but found by experience that the agitation was not satisfactory, so I removed the paddles and placed the hose in as above stated. Although this improved matters somewhat, it was still unsatisfactory, and I finally replaced the half-round tank with a puncheon and found no further trouble.

The form of wagon on which to mount the outfit was the next consideration. After consultation with some of the largest fruit growers in my vicinity, I decided on what is known as a low down "Farmer's Handy Wagon," narrow gauge, six inch tires on solid wood wheels, with front wheels turning under the body, thus enabling the outfit to be worked in closely set orchards without damage to trees or land. As the orchards I had contracted to spray were mostly in full bearing and low headed, this selection proved a wise one, as even with this low down wagon many limbs were scraped and the fruit spurs destroyed.

During the season of 1905, 14 orchards were sprayed and 12,600 gallons of solution passed through the pump. No trouble was found with clogging of the nozzles as a general thing, but owing to the strong suction the strainer at the bottom of the suction pipe became clogged; later this was obviated by using extreme care in straining the solution into the tank.

I cannot give the exact weight of the outfit when loaded for operation, but it was found that a team of horses,

A Government Power Sprayer

This illustration and the one above shows how the gasoline engine was loaded with the tank and the stand for the man spraying on one of the sprayers operated last year by the Ontario Department of Agriculture.

*Paper read at the Annual Convention of the Nova Scotia Fruit Growers' Association in 1905.

Spraying a Spy Orchard.

One of the government sprayers, at work in the orchard, at Trenton, Ont., of Messrs. L. & A. Little, is here shown. This orchard contains over 700 Spy trees, all of which were sprayed three times with most satisfactory results.

weighing about 1,050 pounds each, could handle an outfit on hilly, cultivated ground as easily as could be expected with an outfit of this capacity.

It was necessary at frequent intervals to replace the small washers in the nozzles with new ones, as the chemical action, together with the high pressure at which the pump was run, 125 pounds, soon enlarged the holes so that the spray was not as fine as it should be for good work. It was necessary, also, to replace the length of hose three times during the season, the regular half-inch, four-ply spraying hose of the best quality being used. The continuous high pressure, together with the dragging of the hose over the ground, served to shorten its term of usefulness. For the season of 1906 I propose using what is known as "Pneumatic," a hose used in mines and other such places. It is one-quarter inch, four-ply canvas, covered with capped ends, which will stand hard usage.

It is also my intention to place a small platform over the highest part of my outfit and to spray the tops of the trees from that; then with two lines of hose on the ground to take care of the lower parts, the trees can be well covered. With the proposed platform no higher than the present outfit, and with removable nails, the trees would suffer no more damage than in the past.

Four nozzles instead of six on each line of hose would be an advantage, as better work could be done with less waste of material. In practice we find that we can easily spray out one tank of the solution, or 80 gallons, in 20 minutes.

The daily capacity possible with the outfit may be estimated from the fact that in spraying one orchard with two lines of hose, 1,040 gallons were applied in eight working hours. When it is considered that at times the outfit was at the extreme outskirts of the orchard and had a long distance to travel from the base of supplies, it is unnecessary to say that it was much more economical, so far as labor was concerned, than the usual hand work, to say nothing of the maintained pressure of 125 pounds which of necessity made possible a better application of the solution.

In spraying my orchard I can apply in half a day more solution than I formerly could in two days, and thus leave my men and horses at liberty to perform other necessary work at that busy season.

The outfit more than paid for itself last year in the saving of labor alone in the orchards in which it was operated.

Spraying Experiences for 1905

Joseph Tweddle, Fruitland, Ont.

I HAVE found the application of lime and sulphur to red currants and gooseberries once before the buds open, followed by one application of Bordeaux mixture after the bloom, gives wonderful results in the growth of wood and healthy foliage. Currants hold their foliage much longer than usual. English gooseberries that had been almost destroyed in previous years, were entirely free from mildew on both foliage and fruit. Not only was the crop clean but also the bushes themselves. I attribute the results obtained largely to the application of lime and sulphur.

Another lesson learned was the danger in the use of what is known as Soda-Bordeaux used on fruit trees in conjunction with arsenic, either in the form of Paris green, white arsenic or arsenate of lead. The sal-soda of the Bordeaux and the arsenic form a chemical compound very injurious to foliage I shall use the standard lime and Bordeaux in the future, especially when mixed with arsenic as an insecticide.

In treating Pear Psylla, the lime and sulphur, where thoroughly applied in April, destroyed all the eggs, but where small portions of the tree were missed enough were left to reinfest the trees, as badly as ever before the season was over. Nothing but perfect work in spraying will accomplish its extinction. A Psylla will kill a pear tree just as quickly as will the San Jose Scale, but it can be eradicated by thorough spraying with lime and sulphur mixture. I would respectfully warn pear growers of this serious pest. It is much more prevalent than may be suspected by most growers, but it is too small for easy detection by the naked eye. To the initiated observer, however, its presence is readily detected in the orchard by the busy hum and buzz of numerous wasps and flies, seeking the honey-dew which is exuded by the larvæ, and which is easily observed on the surface of the foliage.

With the general use of power sprayers the advantages and disadvantages in the use of the different machines have been watched with interest. With fine weather and the soil in firm condition for using the wheel-geared horse-power sprayer, a great amount of excellent work can be done at a minimum cost for power, as the team drawing the sprayer furnishes the power. One disadvantage of this machine shows up in wet weather, the horse-power sprayers where the soil is heavy sometimes being laid up for a week at a time from the soft condition of the ground, while the conditions of moisture were propagating fungous trouble most rapidly, thus preventing the application of the spray when most needed.*

The gas sprayer which is a new competitor in the field, using carbonic acid gas for power, relieves the team of the heavy draft, in the case of the wheel-

A Well Tried-Machine

One of the spraying outfits used by the Department of Agriculture last year in Ontario was a Niagara Gas Sprayer. It gave excellent satisfaction. This shows it when it was being dismantled at the close of the season, last fall.

*A number of growers who have been using wheel-geared horse-power sprayers have reported to THE HORTICULTURIST that they have never had trouble on this score. Mr. W. H. Dempsey, of Trenton, states that his team of light horses have little difficulty operating his machine under almost any conditions.

geared power sprayer, and admits of the prosecution of the work, even when the soil is wet, and when the foliage is dry, and usually permits of getting the work done in time for thorough protection. The cost of the gas is the price to be paid for this advantage, which when looked at in comparison with the cost of the horse-power in the case of the wheel-geared machine, would appear to be a considerable item. Again when we come to compare the cost of the gas, which is less than half a cent per gallon or 40 cents per acre per application, it would appear to be a very small consideration looking at the matter from a scientific or business standpoint. The gas sprayer has the advantage also of simple construction and operation. With ordinary care vexatious delays are unnecessary. There are no pumps to get out of order, and the work is done quickly, furnishing any desired pressure for any desired number of nozzles. It remains for the grower to decide which will best suit his special conditions.

The compressed air power machine, also, has the great advantage of light draft, but it is a very expensive outfit, and liable to delays by the use of the engine and air compressor. Besides, the services of an experienced operator are required.

Thorough preparation and straining of the mixture are imperative with power sprayers, especially where a large number of nozzles are in use. A strainer or separator placed between the tank or pump and the hose is the latest and best arrangement. A valve is provided by which the strainer can be cleaned in an instant in case of clogging.

The Peach Nursery

A. B. Cutting. B.S.A.

BEFORE we can raise good peaches we must raise the trees, and before we can raise good trees we must know how to select and treat the seed. Many growers prefer seed from natural fruit rather than that from cultivated varieties, claiming that such is more vigorous and hardy and that the trees are longer lived. While this contention has considerable weight, and while no mistake is apt to be made by its adoption, yet, there are men who use only the seed of budded trees and with the same degree of success.

SELECTING AND TREATING THE SEED.

Whether selected from natural or cultivated fruits, care should be taken to secure pits that are healthy, of good size, and from ripe fruits. It is better also to obtain them from trees of known hardiness and strong growth. Preference is sometimes given to pits from yellow peaches, particularly when the seedlings are to be budded with the same colored fruit. Pits from distilleries, where peach brandy is made, are not fit for the nursery, as the boiling process destroys their vitality.

When it is desired to grow the peach on heavier or moister soils than suits its own roots, the seed of the plum may be used for the production of stocks. For growing peaches on heavy clays, budding on plum stocks is particularly desirable and often necessary. For very dry soils the hard-shell sweet almond is used as a stock in countries where climatic conditions are favorable.

To get an even stand of trees the pits should be stratified in the fall (*i..e*, mixed with alternating layers of sand in a box, or buried in a fairly dry pot in the garden or orchard) and exposed to freezing and thawing till spring, then soaked in water till they have absorbed considerable moisture. They should then be placed in thin layers on the surface of the ground and exposed to the action of frost, being protected from drying by a light covering of leaves or straw. Some growers put the seed in fall directly in the nursery, but by so doing only a portion will grow and no regularity can be attained in the rows. It is better to treat the seed by stratifying, as that prevents vacancies. In the spring, when taken up, most of the shells will be found to be cracked open; the others may be loosened with a hammer. They are then ready for planting in the nursery.

CHOOSING THE SITE.

The most important requisite in choosing the site for a peach nursery is the selection of a suitable soil. Peach pits will germinate and develop in a more or less questionable shape on a variety of soils, but to get the best results one should select a very light, sandy loam, well drained, warm and easy of cultivation. The exposure and location should also be considered. The sweep of prevailing winds should be avoided, and the slope of the land, if any, should be towards the north to retard bud growth in spring until danger from late frosts is past. If near large bodies of water the slope should be towards the water. Select, also, a place that is easy of access, near the road for ease in transporting the trees, and near the house so that the development of the young seedlings and buds may be conveniently watched. A location convenient to a constant water supply is also desirable and, in some sections and seasons, necessary.

PREPARING THE GROUND.

The ground for a nursery should be in the form of a square or parallelogram, and it should be laid out so as to admit of horse cultivation. Strips of land on the ends should be left sufficiently wide for a horse to turn about on.

To get the soil in the best possible condition for the growth of young seedlings, a hoed crop should occupy the land the previous season. A fall plowing is necessary, followed by a similar working in the spring, and a subsequent harrowing and rolling will leave the land in good condition to receive the pits. If the land is not rich enough, apply barnyard manure that is well rotted, and, if obtainable, unleached hardwood ashes at the rate of 40 bushels per acre will be found to give good results.

PLANTING THE SEED.

Nursery rows, for horse labor, should be about three and a half feet apart and laid out as straight as possible. Mark out with a hoe or plow furrows two inches deep and drop the pits about six inches apart and firmly press the soil upon them. Care should be taken that the seeds do not become dry or mouldy before they are planted.

CARE OF NURSERY.

The ground should be cultivated as often as is required to keep the weeds down and the soil loose, especially during the early growth of the young seedlings. Hand hoeing is necessary between the trees in the row. Where the seed may have been dropped too thickly, through carelessness or accident, the superfluous trees should be removed. As the season advances the cultivator should be used less frequently, and when the trees are large enough to shade the ground it should be stopped altogether. In late summer or early fall—the month of August usually—the young seedlings should be budded.

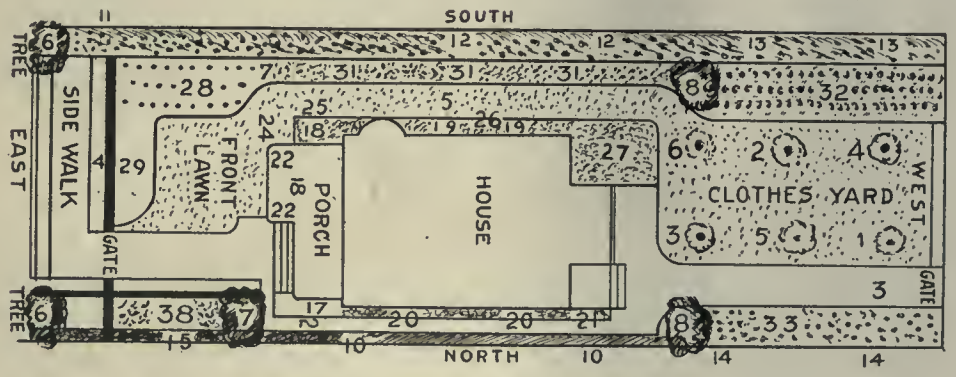
The following spring, when growth begins, the wood above the bud should be removed and all the natural buds and twigs below the scion rubbed off. This should be repeated as often as new buds or twigs appear. All shoots that spring from the roots must also be watched and kept down. Cultivation of the ground should be resumed and continued throughout the growing season. Early in the season a little nitrate of soda may be applied if the growth of the trees is not satisfactory. Summer pruning is practised by some nurserymen, and sometimes with advantage. It is not essential, however. Whether it is advisable or not is a matter of opinion.

Annuals for the Town Lot

Roderick Cameron, Niagara Falls South, Ont.

SINCE the owners of small town lots are in the majority, and many of them are thirsty for information regarding the planting of their lots to the best advantage, a further treatment of that subject in THE HORTICULTURIST is necessary. Many persons have recently bought their homes. Others live in rented homes. In each class may be found parties having admirable taste and love for flowers, etc. Those who have recently bought homes, however, cannot afford yet to plant with the permanent material. Those having rented homes wish to have them beautiful with as little expense as possible, since it would not pay them to plant and improve permanently property belonging to others better able to do so than themselves.

To meet this want, I submit the same diagram as was used last month. Borders, paths and lawns are similar, but annuals are to be planted instead of perennials. There can be excellent results obtained, and quicker returns than from perennials.



Arrangement of Annuals on a Town Lot.

I would recommend the following annuals to be planted, or sown according to the numbers on the diagram. The vines on the building recommended last month will be left as they are, since they should be permanent from

At number 28-29, one foot from the grass margin, sow a row of Sweet Alyssum, and a foot from the alyssum sow a row of purple Candytuft. There is room for another row, and it can be planted with French Marigolds or zinnias mixed. 38 may be sown with Mashet Mignonette, and here and there may be dropped a few seeds of that beautiful poppy, Papaver umbrosum, to brighten the plot of mignonette. The poppy seeds should be sown about midsummer, to make strong plants for blooming the following summer. They are biennials, and will seed and care for themselves after once sown.

The fence must be covered. Sow close to it a row of the tall growing nasturtiums. No. 17 may be planted with ferns from the woods. No. 18 and 27 would look well planted with dwarf nasturtiums. 22-22-24 can be devoted to mixed geraniums, or scarlet salvias bordered with Golden-bedder Coleus, or Madam Saleroy geranium. If the dividing line fence at 11-12-12-13-13 is open picket or netting, plant sweet peas a foot from it, beginning at 12, and coming to the front 11. From the centre 12 to the end of the fence 13 may be planted or sown with ornamental gourds, and from there to the grass margin with Asters, Ten Week Stocks, Annual Gaillardias or Sweet Scabiosa. Beside the clothes posts, 1, 2, 3, 4, 5, and 6, plant or sow a few seeds of Morning Glory or Adlumia cirrhosa to cover them. At 33 sow next the fence the tall or climbing nasturtiums to cover it, and edge the border next the grass with tufted pansies, the remaining space with Antirrhinums and Linaria bipartita, of which there are two colors, purple and white, the purple being the type. They are prolific bloomers all summer, resembling miniature antirrhinums, and good to cut.

Most of the above annuals may be sown where they are expected to bloom, but there are a few that would bloom earlier, and perhaps be better if sown in a hot-bed early in the spring, and planted outside when large enough. Those that would be the better for this treatment are Ten Week Stocks, antirrhinums, asters, Tufted Pansies, Sweet Scabiosa and Linaria bipartita.

When I want to grow some choice annuals in a hot-bed from seeds, I generally commence to get some good hot manure ready about the middle of March. I like to turn it over once or twice before the first of April to get rid of the most of the heat and steam. I then form it into a bed and place the frame on it. About the first of April I place the sash on the frame tightly for a day or two, and then open the sash and put into the frame four to six inches of rich loose loam, and replace the sash, leaving about three inches at the top open to let out the steam. About April 8 or 10 the bed should be in good condition to receive the seeds. About that time I stir the soil thoroughly, rake level and fine, and draw shallow lines or drills four to six inches apart north and south, because the frame should face south. In these lines or drills sow the seeds thinly, and cover in proportion to the size of the seeds. The smaller seeds like dust should be sown on the surface; they will find their way into the crevices of the soil be it ever so fine.

Some varieties of annuals germinate very quickly; others are very slow in germinating. The latter must be known so that they can be treated properly. The best results are obtained by covering them with long strips of paper, held in place with a few small stones. This keeps the heat and moisture on the seeds, forcing their germination much faster than if left bare. Be sure to uncover them as soon as they are up, by placing the strips on a few stakes from four to six inches above the plants. In a few days they will be strong enough to stand the direct rays of the sun.

I scarcely ever prick out the annuals separately. It is too much labor. I prefer sowing enough rows to begin with. If they are too thick, I thin them out and throw the thinnings away.

About June 1 these plants should be in good condition to plant in the open for blooming. At this time I treat them differently to any other person I have seen or heard of. I drench them, soil and all, with water, and allow 10 or 15 minutes for it to settle. I then begin at one end, place my hands one on each side of the row of plants, and press the fingers down through the soft soil below the roots. The soil and roots between the fingers is packed tightly and drawn up, the soil and roots being formed into a hard ball. There may be in each ball of earth two or three plants.

When all the plants are treated in this fashion, I place them back into the frame in rows, covering the balls with the soft soil in the frame, and the frame is shaded for a day or two until the plants survive the shock. After three or four days they may be subjected to all the light and heat they can get. In two days more they may

be lifted. The balls of earth are now bound together with roots, and may be handled much more quickly than if the plants were grown in pots from the beginning. There is no wilting, and the plants do better. They make more fibrous roots, giving them a better hold of the soil. This method will save growers of such plants many disappointments, not only in the growing of annual seedlings, but all other seedlings as well.

Formal Gardening

A. K. Goodman, Cayuga, Ont.

EVERY home in the smaller towns should have a garden, for the beneficent influence on the taste and character, as well as for the pleasure which it confers. The pursuit of gardening in connection with the ordinary business of life is to be highly commended. The amateur must of necessity avoid the many exotics requiring a degree of care and protection from adverse influences which only those who have conservatories can bestow; but there are in Ontario a very large number of hardy varieties, both beautiful and fragrant, which the owners of the smallest gardens can cultivate easily and successfully. Formal gardening is a wide subject, but, as commonly practised in Ontario, usually means, from a floral standpoint, those beds that are planted by the flower-lover to ensure a continuity of bloom or color from spring until frost. It does not always comprise set pieces, but is apart and distinct from those specimens grown in the garden for cut flowers.

Now is the time to plan the summer gardens of 1906. There is ample room for the development of individual tastes, and wonderful scope for the artistic colorist in formal gardening; yet the steps of progress are circumscribed by certain primary rules rigidly laid down by nature. These rules must be obeyed. They are drainage, good soil suitable to the plant, sunlight, freedom to develop unchoked by plant life or roots of trees, and water. If these are ever borne in mind the grower may revel in a pleasure numbered among the greatest given to man.

In the shapes, sizes and proportions, and in the blending of color, there is no limitation. The amateur's beginning should be simple, but he should be in earnest and thorough. From the public gardens of the city he can personally obtain ideas for reproduction. One thing more he must learn, that is, after the garden is made and planted it must be cared for, weeded, edged, etc. Once safely started, he will, in a few years, be coaxing others along the path he so feebly walked in the beginning.

Circular, oval, ribbon, star or oblong are all effective, though the surrounding grounds must all be taken into consideration. Use the three colors or shades of the three colors in each bed. Cut 1 shows a charming result obtained from a centre of castor oil bean, surrounded by dark red geraniums and climbing blue ageratum, with a border of alyssum. The ageratum climbs over the other plants to the castor oil plant, making the general effect superb. A large oval bed raised in the centre may contain castor oil beans, two circles of cannas, one of helianthus, one of elephants' ears, one of climbing ageratum, one of red achyranthes, one of bronze bedding geraniums, and a border of silver-leaf geraniums, Madam Saleroi.

A good ribbon bed may be made with a centre of four rows of scarlet geraniums; on both sides have three rows of dark red coleus; on both sides again plant two rows of silver-leaf geraniums; extend as far as required and border with red alternantheras. A circular garden of cannas with different colored coleus gives a handsome general effect along with the foliage of the shrubbery and trees as shown in the second cut.

A Charming Flower Bed with Castor Oil Bean in the Centre

A Circular Bed of Cannas and Coleus

The Freesia

W. T. Macoun, Ottawa, Ont.

THE freesia is one of the most charming and most graceful of the winter flowering bulbs. It has a delightful and penetrating odor, and one flower will scent a whole room. Unlike most other bulbs which bloom in the winter the freesia does not require to be well rooted before forcing. The most satisfactory results are obtained by leaving the bulbs in the cellar for a few days, only until roots begin to push out, and then bring the pots up and force them. They may even be forced with satisfaction by bringing the pots or boxes into a warm room as soon as the bulbs are planted.

The soil should not be kept very wet until they are growing thriftily, as the bulbs might rot. Many a beginner has thrown out a pot of freesias in disappointment at no flower-buds showing,

Freesias Grown in the Window
Photograph by Prof. F. T. Shutt

while had he had patience they would soon have rewarded him with an abundance of bloom.

Freesias should be started in August if the bulbs can be obtained, and even if kept growing steadily no flowers need be expected before the last week of December, unless with Bermuda-grown bulbs, which can be purchased early in July. With them flowers should be produced a little earlier. As the bulbs are very cheap, about $1.00 per 100 retail, they may be used freely, and there will be a greater mass of flowers if planted fairly close. Freesias are very effective when grown in boxes, as is well shown in the illustration. They should be placed in the window so that the plants will get an abundance of light, for it takes a considerable time for them to come into bloom, and the plants will be very spindley and the flowers small unless they get plenty of light and sunshine.

The bulbs should be planted from one to two inches apart to get the most effective display of flowers. From a pot of six bulbs 124 flowers were produced. As the plants grow tall before blooming, they should be supported by a wire. They are very easily grown, but as they make a great deal of growth before the flower-buds show, one must have patience, but the reward is well worth waiting for.

Our Native Ferns

Dr. Douglas G. Storms, Hamilton, Ont.

THERE is no branch of plant culture so fascinating as the collecting, arranging and growing of ferns in the garden. About 10 years ago I started to make a collection with the object, at first, of being in the woods and close to nature with my two little boys, but gradually the quest assumed new interests, until I was absorbed by it, and now I have a collection of 40 to 48 varieties all growing in the garden as well as they did at home in their own haunts. With about six exceptions all these varieties have been collected in the district surrounding Hamilton. Last fall I had a collection of 33 varieties at the Horticultural Exhibition held in Hamilton. Although the exhibit was interesting, it would have been much more so had the show been in July rather than in September.

When I began making the collection I was told by some men of wide experience, that ferns would not grow in such an exposed situation as mine was, but time has proved that they were wrong. The bed of Adiantum pedatum shown in the photograph, is nine years old, and is better than can be found in the woods anywhere to-day.

Several important points regarding the handling of these plants have been learned since the first specimens were put in the garden. Great care must be taken in gathering them. Less danger of loss will result if they are transplanted when in a quiescent state, but with my limited time I have been obliged to take them at whatever season they were found, and I have rarely lost any specimens. Plenty of earth should be taken up with the plants, especially if they are removed out of season. A moderately good soil in as shady a place as possible is the most suitable for their development. After being planted they should be left alone. If ferns are coddled they die.

Conditions, as nearly as possible the same as existed where the ferns were found, should be maintained at all sea-

Seventeen Varieties of Ferns in Dr. Storms' Garden

A long bed of ferns between the walk and the fence in Dr. Storms' garden.

sons of the year. In the fall it is well to spreads leave over the fern beds. These can be left there, and in the spring a layer of leaf mould is formed almost the same as the plants were accustomed to in the woods.

In collecting I have found the little book, "How to Know the Ferns," extremely useful, and in fact better for an amateur than many larger works. A good lens is needed to distinguish some of the varieties.

In studying the names it is better to get both the household and scientific names, as though the latter are seemingly long and difficult, are not easily lost when once learned, and it is much easier to talk ferns using the botanical names. These names, too, have each a meaning which is most interesting to determine, and which should be carefully studied by all those who have a special liking for beautiful flowers.

The names of the ferns exhibited last fall will give a fair idea of those best for cultivation. They are as follows: Asplenium angustifolium, Narrow-leaved Spleenwort; Asplenium acrostichoides, Christmas Fern; Asplenium acrostichoides, undulatum; Asplenium filix-fœmina, Lady Fern; Asplenium filix-fœmina latifolium, Broad-leaved Lady Fern; Asplenium thelypteroides, Silvery Spleenwort; Asplenium trichomanes, Maiden-hair Spleenwort; Asplenium ebeneum, Ebony Spleenwort; Aspidium cristatum, Crested Shield Fern; Aspidium marginale, Evergreen Wood Fern; Aspidium spinulosum, Spinulosa Wood Fern; Aspidium spinulosum dilatatum; Aspidium munitum; Aspidium noveberacense, New York Fern; Aspidium Goldieanum, Goldie's Fern; Aspidium thelypteris, Marsh Fern; Adiantum pedatum, Maiden-hair Fern; Camptosorus rhizophyllus, Walking Fern; Cystopteris bulbifera, Bublet Bladder Fern; Onoclea sensibilis, Sensitive Fern; Onoclea struthiopteris, Ostrich Fern; Osmunda cinnamomea, Cinnamon Fern; Osmunda Claytoniana, Interrupted Fern; Osmunda regalis, Royal Fern; Pellæa atropurpurea, Purple Cliff Brake; Phegopteris dryopteris, Oak Fern; Phegopteris hexagonoptera, Broad Beech Fern; Pteris aquilina, Umbrella Brake; Scolopendrium vulgare, Hart's Tongue; Woodsia Ilvensis, Rusty Woodsia; Woodsia obtusa, Blunt-lobed Woodsia; Polppodium sculari; Lomaria spicant.

The Growing of Tender Evergreens

Roderick Cameron, Niagara Falls, South

THE cupressus are among the most beautiful evergreens, and amateurs who know the secret find little difficulty growing them successfully. Many varieties are tender in this country, and the tenderest varieties are the most beautiful and graceful. The variegation in some of them is equal to some of our most beautiful tropical plants, and, for the above reasons, I am surprised that they have not been more extensively grown as tub plants for the lawn during the summer, or for the decoration of halls and churches during the winter.

A collection of cupressus are very pretty in beds on the lawn. The illustration shows the cupressus in half-inch, galvanized, chicken netting baskets, lined with moss, and then planted the same as a hanging basket lacking the vines. The netting was obtained from a wire factory in a bale, and was cut to the size desired for each plant with a plumbers' shears, and sewed in basket form with wire the same as the netting. Any handy man can make one of these baskets in a few minutes.

The plants on the right, showing the roots protruding through the side of the basket, has been in the basket for two years, and will remain there for another year, when it will be changed into a larger basket. It must be borne in mind that this method is only intended for half hardy, or tub plants, of any variety grown by the general public. The nurserymen can make general use of it for evergreens, and many expensive and rare deciduous plants.

Each basket costs about five cents. Tubs that look respectable, when made of material that lasts any time, cost about two dollars, and are heavy and awkward to handle, and they look unnatural and are out of place on the lawn. There is also a loss of time connected with caring for them, and the continual watering that if neglected, means sickly, diseased, insect eaten plants, and probably their death. The basket described requires no watering, as the plants, with the exception of the basket, are the same as if planted in the natural manner. The plants take the moisture through the basket, from above as well as round about. The roots, also, have freedom to pass through the meshes of the basket. Plants treated this way are always clean and healthy, and can be moved from place to place during the summer without loss.

WINTERING HALF HARDY PLANTS

My method of keeping the half-hardy plants through the winter is very simple and inexpensive. I dug a cold storage pit, eight feet deep, below the natural surface of the ground, 16 feet wide and 30 feet long, lined it with galvanized corrugated iron along the sides and threw joists across on a level with the surface soil. A much smaller hole would do for amateurs with only a few plants. On top of this was placed a greenhouse roof for light and air when necessary. Two feet of good soil was placed on the natural floor of this cellar. Into this is planted the plants that will not stand our winters. The basket and tub plants are dug up before severe frost, and replanted in the cellar, basket and all, as they were out doors. The two feet of soil in this cellar is thoroughly watered in the fall before the plants are put in. This is all the watering required until

Cupressus as grown in half-inch galvanized chicken netting baskets lined with moss.

the following spring, when the plants are set out again in the open.

Hydrangeas and oleanders, as kept in the greenhouses over winter, bloom during the spring months, but by adopting the foregoing method, they bloom the whole summer, until late in the fall. Our lawns, thus, are more beautiful when friends are visiting us.

The plants in this cellar have stood the test of 16 degrees of frost, and I believe they would stand a few more degrees without injury. This is the secret. As soon as they become frozen, they are not touched until the frost comes out. This may not happen for weeks at a time. The place is kept in perfect darkness until the frost is out by laying a temporary inch board floor over the joists over head. As soon as the frost is out the light must be let in again.

Some of the plants that are not hardy that were treated in this way include, Cotoneasters, Eleagnus, Euonymus, Hydrangeas, Holly, Laurel, Rhododendrons, Cupressus, Taxus or Yews, Oleanders, Acubas, Lenon Verbena, Fuchsias, and I could mention many others, but space forbids. Is it not then possible to have a beautiful home without a greenhouse?

The Velvetty Lawn

Rev. P. C. L. Harris

LAWNS are developed, not made in a day. They ought to be at their best hundreds of years after they are made. Many people wonder why their lawns give so little in return for the labor they put on them. Devotion in cutting or proper watering is only a portion of the work needed. In the *making* of the lawn was where the care was needed, but was not given. Frequently when a fine, comfortable house is built the practice is to level the hard pan soil taken from the cellar, sow some indifferent lawn mixture on it and wait in vain for the velvety grass. It will never come that way.

An ideal lawn is desired, but circumstances tell you that you cannot afford it. It would be wise to begin now and start an improvement fund by placing aside a little money every week or every month until there is sufficient to pay for the work. Many people wonder why so much water is required. The main reason is because the lawn has not been properly made. Care at the beginning spells *success*.

The first and most important factor is to have the ground thoroughly prepared by trenching two to two and a half feet deep, the soil to be well mixed with crushed bone—not too fine. In trenching carry the soil from the first trench to the far side of the plot, where it will be in place to fill in the last trench dug. If the soil is sandy, use plenty of cow manure with the bone; if clayey, use plenty of half-rotted stable manure with the bone. Then level and roll and reroll until perfectly smooth.

It is important to ascertain what kinds of grass does best in the particular locality. For a general mixture use the following: Red Top, Kentucky Blue, and plenty of Festuca Ovina, with a little White Clover. If the locality is subject to heavy rains before the grass becomes well established, sow some white mustard or rape with the grass seed. As soon as the grass is nicely up, mow, so as to destroy the mustard and rape.

Nothing is more beneficial to a lawn than a fair sprinkling of crushed bone early in the springtime. This is a cheap and valuable fertilizer.

Many people have excellent opportunities for fine lawns were it not for the density of shade. In such cases the trees should be trimmed, and perhaps some of them cut out. This will pay. However, do not dock the maples. The lilacs are very injurious, and it would be best to keep them well removed, if you want a good lawn. The roots are great travellers, and gather up all nourishment for a considerable area around them.

BULB DEPARTMENT

Questions Answered by Mr. Herman Simmers

Bulbs for the Season

What are the best varieties of bulbs for outside culture? I would like to have a few to cover the season if possible.—Subscriber, Port Hope.

This question is wide and I would suggest that subscriber condense his query. This question might be answered by giving a list showing in what succession such bulbous plants flower. The list is Snowdrop, Crocus, Tulip, Narcissus, Hyacinth, Lilium candidum, Montbretia, Japanese lilies, in variety), Tuberous-rooted Begonias, gladiolus, Tuberoses and dahlias.

Keeping Bulbs Over

Are bulbs grown in the house during winter of use to keep for the following season? If so, how are they best kept?—H.B.L.

To answer this directly I would say they are not of any use for the following season. If, however, they are wanted to be kept over, the pots should be set in the cellar after the plants are through blooming, and the tops allowed to die away. At this time water should be put on occasionally. As soon as the tops are dried off no more water is required. The bulbs should be left in the pots for a few months, after which they may be taken out and partially cleaned to allow them to become thoroughly dried. Final cleaning can take place, after which they will be ready to plant again. They do not flower nearly as well the next season.

Coffee in Glengarry

Any novelties in horticultural lines are to be found in different parts of Canada, but coffee growing in northern Ontario is something beyond the ordinary novelty. Without the aid of greenhouse or hotbeds Mr. William Gamble, of Lancaster, has had success with this plant for two seasons.

His plants this year were obtained from seed sown on May 10 last in drills two feet apart. The coffee beans were put about three inches apart in the drills and covered lightly. In about 10 days the seed had germinated and soon the crop was making good headway.

"It will thrive on any good garden soil," said Mr. Gamble, "and needs no special care. All that is necessary is to keep the ground free from weeds by frequent use of a hand cultivator."

The coffee plant grows somewhat the same as the common bean but much taller and with an abundance of pods. Many plants reached a height of three and a half or four feet and pods were scattered freely in clusters of one to

three from within six inches of the base of the very tip of the vine. Two or three round and slightly flattened beans smaller than the common pea were

Two of Mr. Gamble's Coffee Plants

found in each pod. Their productiveness can be judged from the fact that over a bushel was harvested from four ounces of seed.

Japan Quince is Edible

Prof. H. L. Hutt, O.A.C., Guelph

Is the fruit of the Japan Quince, Pyrus Japonica, an edible thing? It seems as if it might be, but one scarcely likes to risk it.—J. S. McClelland, St. Catharines.

The Japan Quince, Pyrus Japonica, has been cultivated for its flowers rather than for the fruit, hence the development has been more in the improvement of the flowers than in the improvement of the fruit. The fruit, however, is edible, although not nearly so good as that of the common quince, which has been grown especially for the fruit. I have used jelly made from the fruit of the Pyrus Japonica, which was excellent, but this is probably the chief way in which it can be used to advantage.

Crushed Bone is a cheap and valuable fertilizer. Nothing is more beneficial to a lawn than a fair sprinkling early in the spring.—Rev. P. C. L. Harris, Guelph.

Early Tomatoes.—I grow a few early tomatoes for the fancy market, and I obtain best results from plants that have been transplanted at least three times before being set out. When this is done there is a ball of fibrous roots and practically no top root. These plants when set out never wilt. I start the seed about February 15, and set the plants out soon after May 24.—Geo. Benner, Burlington, Ont.

Selling Vegetables in Cities

Many vegetable growers who can produce excellent crops are not successful in disposing of their products. Those who attended the meeting of the Toronto branch of the Vegetable Growers' Association on January 6, and heard the remarks made by Mr. Geo. Syme, obtained many pointers of value to growers who truck their crop to the town or city. He emphasized the fact that every gardener must understand the trade thoroughly and also know the characteristics of his customers if he hopes to do a good business.

Some men want to do business in a hurry but there are others who are slow-going and there is no use trying to rush matters as it is detrimental in closing a sale. He advised growers never to have more on the waggon than the merchant wants and not to pretend they have all their load sold except enough to meet their requirements. As a rule it is best to make the retailer believe you are somewhat ignorant and to keep him thinking he knows it all.

Too many growers are afraid of competition. This should not be the case and no matter how many vegetable growers' waggons are around a store door an attempt should be made to do business there. If no sales can be made that day, learn what the chances are for another. The best practice is to have a load sold ahead, and no grower should take in more than he knows he can handle. Customers should not be secured too close together, because if one merchant sees a gardener supplying another a few doors from him it creates a jealousy and it is much better to hold a large trade with one man than to sell a little to several. The practice of selling to an individual in front of the door of a customer was strongly condemned because it was claimed that he immediately lost faith in the producer who resorted to such practices.

The shrewd gardener exercises great care in loading his stock and in getting rid of the inferior grades. As a rule the retailers who are after the low grade vegetables are out early in the morning to meet the growers before they reached the city. The good product should be kept covered, because if a box of good vegetables is placed beside inferior stuff the latter looks 100 per cent. worse than it really is. Usually the low grade stock can be sold before the merchants who wanted the good line are reached. Mr. Syme advised the producers to hold out for a good price for a good article and not cut down the price through fear of losing the sale. Poor stuff, however, should be got rid of at any price.

Growers were warned never to misrepresent their goods by saying it was first-class when it was not. When a retailer asks for a certain article and you find that you had none on hand it is good policy to buy it for him from some other grower.

The general appearance of the man and his team and rig were fully discussed by Mr. Syme. He advised every grower to furnish a first-class outfit as there is nothing that keeps a man down so much as a poor team and rig. As for the man himself he should never go into a store with a pipe in his mouth or smelling of liquor. It is never wise to interrupt a man when he is doing business. In every case he should be approached in a business way, but if he does not want any of your stock do not raise a fuss about it or hang around coaxing him. There is no use trying to force goods on a merchant.

The Progressive Vegetable Grower

A. McMeans, Brantford, Ont.

The progressive vegetable grower is an enthusiast and, unlike the farmer, he believes in intensive cultivation, and wants to secure two or more crops from the one piece of ground. He may be classed with the florist, bee-keeper or chicken-fancier, in the fact that he is more ready to attend conventions, subscribe for trade journals (and right here let me drop a word of congratulation to the management of THE HORTICULTURIST for the improvement they have made in that valuable magazine), or in any way further the interests of the business they are engaged in.

Take the florists as an illustration, and look back a few years and see the improvement that has been made in that industry. The question then arises: How and why has this advancement been made? Because the florists are enthusiasts, or in other words, what some people choose to term cranks on the business they are interested in. They are always striving and seeking after new ideas and new methods of culture so as to be in the advance guard: So, too, is the advanced vegetable grower, with this difference, that he is just entering into the new era that will eventually place him where he belongs. With the co-operation of the Government through a fully equipped and thoroughly up-to-date experimental station, he will soon forge to the front, and be a credit to his home and an honor to his country.

Kindly send me THE CANADIAN HORTICULTURIST for the ensuing year. It is well worth the price asked and should be in the hands of all who are interested in fruit or flowers.—(Samuel Shearer, Niagara-on-the-Lake, Ont.

Tomatoes and Cucumbers for Early Markets

W. W. Hilborn, Leamington, Ont.

ON growing early cucumbers and tomatoes for market two special local conditions are requisite for the most profitable production of the crop. The first is a high, warm, sandy soil; the second is nearness to a large body of water to prevent late spring frosts. Within the last few years this phase of vegetable growing has become an extensive industry in this locality. Early tomatoes receive the most attention.

The plants are grown in greenhouses. I have four houses 10 feet wide and 50 feet long, and one house 52 feet wide and 80 feet long. They are cheaply made and cheaply heated, but specially adapted to the growing and hardening of early vegetable plants. The construction and heating of these houses may be a subject for a future article.

The seeds are planted about March 1 to 15, in trays or flats one foot wide, two feet long and four inches deep. In these is put about two and a half inches of good garden loam which is thoroughly saturated with water, and covered with about an inch of soil. This makes an ideal bed on which to sow the seeds. Make small drills across the tray one quarter inch deep and one and a half inches apart, and in them sow the seeds thinly. By having the soil wet in the bottom of the tray, enough moisture is usually supplied to last until the plants come up. They should be watched carefully at this period, and not allowed to get too dry, nor should they have too much water as they are very easily destroyed from the time they begin to germinate until they come through the ground.

When the seedlings have developed two rough leaves, transplant them two inches apart each way. When they begin to crowd each other, transplant about three inches apart, and when they again crowd, give them their final shift into individual boxes five or six inches square, or to positions five or six inches apart each way in trays or beds. The soil in which these plants are grown should not be too rich in nitrogen, but should contain a good percentage of phosphoric acid and potash. In growing the plants great care must be taken in watering. Early in the season it should be done in the morning. Saturate the soil to the bottom and do not water again until the soil is dry on top. Give ventilation whenever possible to secure a strong, stocky growth. The house should be kept at a temperature of about 60 degrees at night until the plants come up. After that about 50 degrees at night and 75 or 80 degrees during the day is sufficient. As soon as the weather will permit many of the plants are put in cold frames and covered at night with cotton.

Planting in the field is usually commenced about May 15 to 20. A warm sandy soil, rich enough to produce a good crop of corn, is selected, and the plants set four feet apart in rows five feet apart. It pays to put a large handful of good fertilizer around each plant, and to work it well into the soil. A fertilizer containing about four per cent. nitrogen, eight per cent. phosphoric acid, and seven per cent. potash is satisfactory. The plants are cultivated frequently until they are so large that they prevent it. As the plants grow larger the cultivation should be more shallow

I have tested many varieties and find Earliana much the best early sort for this locality. I put out 18,000 plants of this variety last season, and began to ship the fruit July 6. The fruit is sent by express to cities, towns and villages from Quebec to Winnipeg. The greatest drawback we have is excessive express rates. About one-quarter to one-third of the proceeds of the crop is taken by the express companies for carrying it to market.

Cucumbers are started in trays in the same way as the tomatoes except that the seeds are planted farther apart—not less than one and a half by two inches. The trays should be placed in the warmest part of the greenhouse. Cucumbers require a soil rich in humus or decayed vegetable matter.

When the first rough leaf is about the size of a dime, the seedlings should be transplanted and set three or four inches apart in other flats. When they have made four or five rough leaves they can be set in boxes seven inches square, one plant in a box. If trained to stakes the plants can be left in these boxes until part of the tomato plants are set out. Then they are put where they are to remain for cropping. Two rows are put in the 10 foot houses and 10 rows in the large house as shown in the illustration. The plants are set three feet apart and trained to a V shaped trellis six feet high, made of binder twine. All the vines are kept on the trellis and none are allowed on the ground.

In the large house there are no benches. The plants are set in the ground soil, which is made rich with manure, finely ground or dissolved bone, and wood ashes. Large quantities of water are required to grow cucumbers. We use a windmill and a gasoline en-

Cucumbers as grown in Mr. Hilborn's Greenhouse.

gine to raise water into an elevated tank. This gives us a good supply, which is piped into all the greenhouses and arranged so that we can reach all parts of the houses with hose.

Arlington White Spine is the variety used most extensively. The past season we began shipping cucumbers May 29 in 11 quart baskets, 18 to 24 in a basket. This industry is rapidly increasing in importance, and the need for experimental work is generally recognized.

Forcing Cucumbers

THE forcing of cucumbers is treated in Bulletin No. 231 of Cornell University, Ithaca, N.Y., by Professors Craig and Hunn. It is advised that the seed be started in small pots or sod, so that the soil cannot break away from the roots of the young plant when being transferred to the benches. Soil consisting of equal parts of loam, leaf mould and sand is recommended for the pots and loam, sand and well-rotted manure for the benches. The plants should be placed two feet apart. To avoid "damping off" a handful of sand is scattered under the ball of roots and over the surface around the stem. The plants are trained on wire trellises. Stout wires are run lengthwise and finer wires connecting an upper and a lower strand used. The plants are tied to these as they grow. When the main vine has reached the desired height the tip is nipped off and the development of laterals induced. No fruit development should be encouraged until the vines are stout and strong. The fruits develop rapidly and in many cases require some support to prevent them breaking the vines down. Some growers make slings for the fruit, while others place a thin board horizontally and rest the fruits on this. The time of planting depends on when the crop is required. About two months from the time the seed is sown the crop is ready for market if no setback has been received.

Some growers do not use trellises, but those who have tried both methods prefer having the vines overhead. Considerable quantities are grown in Ontario every year.

"I always like to have the cucumber vines on wires above the benches," said Mr. J. E. Terrill, of Picton, to THE HORTICULTURIST, a short time ago. "The plants are much more easily watered, the fruits are kept out of the dirt, and the crop can be handled more readily. I like to have them ready for market by May 15, and the same vines produce a crop until the outdoor varieties come in.

I have been a regular subscriber for THE CANADIAN HORTICULTURIST for 24 years, and would not think of doing without it.—(W. C. Reid, Belleville, Ont.

Planting Asparagus

Prof. H. L. Hutt, O.A.C., Guelph

I am getting ready to plant a bed of asparagus. The land is fertile, and somewhat wet, but I am having it underdrained. I cannot get the pipes down more than two feet or so. Would this soil be sufficiently deep for asparagus, and would the underdraining be likely to make the soil produce a crop early in the season? I would like to get a clearer idea as to how soil that has been drained compares with natural sandy soil, that is, in earliness of workability and in earliness of the crop produced. The distance apart for planting asparagus varies from six feet between the rows and three feet in the rows down to three feet by one foot apart. Which is the best and most practical space?—(F. P. W., Toronto.

I have at hand no data from which to make comparison of naturally well-drained sandy soil and thoroughly tile-drained low soil on the earliness of the crops grown on them, but my impression is that the naturally well-drained soil would be earlier and far more satisfactory than the tile-drained soil. Asparagus does best on soil naturally well drained, and I would hesitate to plant it very extensively on soil which was not well drained. I am inclined to believe that with the tiles only two feet below the surface there might be danger of the roots getting into and blocking the drains.

The distance apart for planting asparagus has been variously given, both for field and garden culture. For convenience of cultivation, it is recommended for field culture that the rows be four or five feet apart and the plants two or three feet apart in the row. This, however, is more than is necessary for the full development of plants. To economize space or to get as much crop off a given area as possible, I would recommend setting the plants two feet apart, in rows three feet apart. This will give plenty of room for full development, and if the ground is liberally manured the plants will not suffer from exhaustion of the soil.

Bunching Vegetables for Profit

In discussing the best methods for bunching crops, at a meeting of the Toronto Vegetable Growers on January 6, Mr. R. Lankin claimed that much time and money was lost by the system followed by many of the growers. Putting up small bunches was claimed to entail a great loss of time, and it was pointed out that with the vegetable grower, as with other people, time means money. With almost every crop larger bunches can be made with advantage and profit to the grower.

It was asserted by Mr. Jos. Allen that many retail dealers want five cent bunches and if larger bunches are made they frequently sell for less than they are worth. Mr. Jos. Rush advised that an effort should be made to establish a uniform system of bunching throughout Ontario. One grower does not know what another grower means by a bunch. A five cent bunch means anything. It may consist of 12 onions or there may be only six. Something definite should be decided on. He recommended that beets and carrots should be put six in a bunch, onions 12 in a bunch, and radishes 12 in a bunch. He pointed out that more care should be taken by the individual grower in grading the vegetables. It was suggested that the Association draw up a scale for bunching and submit it to the other Vegetable Growers' Associations. Something should be done to adopt the same system throughout the Province.

Mr. Delworth remarked that bunching as practised by many growers is very expensive, and in many cases more could be had for the same crop if it were sold in bulk. Much of the bunched good was sold at a loss when labor is counted in. The time required for washing and tying ran away with the profit. A great many growers get into the way of bunching and do not change their methods because they have never figured it out. It was suggested by Mr. Geo. Syme that the system of bunching should be regulated by the merchants to whom the goods are to be sold. The high-class butchers and grocers want bunches that will sell two or three bunches for 10 cents, whereas peddlers want everything in five cent bunches.

The Onion Bed

In an interview with THE CANADIAN HORTICULTURIST, Mr. George Benner, of Burlington, said, "The onion bed should not be ploughed in the spring as the ground is much more easily kept clean. I use plenty of manure and plough it in in the fall. If the bed is slightly rounded up to keep it free from water and prevent baking of the surface soil, better results are sure to come.

"Snow or frost will not hurt onions. I sow early Globe Denvers as early as the ground can be worked. The best yield can be had from planting in rows 12 inches apart. These can be cultivated readily with the hand cultivator. Plenty of work is needed to keep the onions growing steadily". "One of the main things in growing onions," says Mr. Benner, "is to have the crop ripened and cured before rainy weather comes in the fall."

Peppers need rich sandy loam and frequent cultivation. I grew 8,000 plants last year. They were started in the greenhouse about the middle of February. One transplanting is sufficient. After all danger of frost is past I plant them in rows two and a half feet apart, and one foot apart in the row.—(Geo. Benner, Burlington, Ont.

The Canadian Horticulturist

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THE SPRAYING SITUATION

Happily for the fruit industry of Canada, orchardists in all sections are gradually adopting spraying as one of the essentials to the production of first-class fruit. In some districts and in some exceptional seasons, conditions are such that the grower does not feel that the ravages of insect or fungous pests warrant the expenditure of time and money demanded for thorough work. For continual success, year after year, scientific spraying pays. Leading orchardists in the various fruit sections have proved this.

Some successful growers claim that they can reap bountiful harvests by proper cultivation and by maintaining such conditions that insects have no harboring or breeding places. These precautions are beneficial, but where 60 or 75 per cent. of the crop is free from blemish under such conditions, 90 per cent. would be perfect if spraying were carried on in conjunction. In most sections the orchard pests must be fought in more ways than one. That this is the case has been brought home forcibly during the past few years to those who grow fruit extensively.

The difficult part of the spraying problem is to show the man with the small acreage that thorough spraying must be done. Many such growers cannot afford to purchase a power sprayer, and effective work cannot be guaranteed by the ordinary hand pump. In some sections, an attempt has been made to have the spraying done by the same system as threshing is done. This method furnishes the proper power but it has disadvantages. The chief objection is that a great number of orchards are not sprayed at the right time. Practically all the trees in a locality are ready for spraying about the same date. Farmers at the best, are slow to agree under such circumstances. Everybody wants the sprayer at the same time. The result is numerous orchards go unsprayed and the owner of the machine does not make sufficient cash to convince him that it is a paying investment. When associations own the machine and hire the operator the latter difficulty is overcome, but the former remains.

There are two ways in which this may be remedied. One is the education of the farmers or fruit growers, by example where possible, to work together more harmoniously for mutual benefit; the other is the placing on the market of a less expensive power machine. At present too many have to club together to make the operation of the machine a paying proposition, and the result is some orchards do not receive effective treatment. Thus, centres are left from which insects and fungi spread to the surrounding orchards. The same conditions exist in the leading fruit sections. Here and there is a grower who will not spray. His orchard, then, is the breeding centre for the district, and the labor connected with spraying is doubled to his neighbors.

There is yet much to be done before spraying will become general in the apple sections. The governments have done yeoman service, but much remains to be done. The co-operative fruit growers' associations, too, have in some cases been of great benefit in introducing the practice, and in forcing members to spray their orchards thoroughly a certain number of times. The small, unsprayed orchards are the curse of fruit growing. It is the duty of those who realize the advantages of spraying to spray the more thoroughly and show their less intelligent neighbors by practical results that it pays. It may take time but eventually they will be converted.

DOMINION FRUIT CONFERENCE

There will convene at Ottawa this month the most important gathering of fruit growers ever held in Canada. The delegates appointed by the various provincial fruit growers' associations are the leading and most representative fruit growers in the Dominion. It is well that this is the case, because the matters that are to be discussed are of vital importance to the fruit industry.

The convention will fail in one respect if it does not succeed in arranging for the holding of similar conferences at regular periods in the future. Spasmodic gatherings of this nature accomplish but little. There is as much and even more reason for the holding of annual, or at least bi-annual national conferences, as there is for the annual conventions of the provincial associations. The matters to be discussed this year are of such far-reaching importance they can be carried to a successful issue only by systematic and sustained effort. The provincial governments give financial assistance to their local associations each year. The Dominion government should do the same for a larger body.

The Canadian Horticulturist will be enlarged next month that it may contain as full a report of the conference as possible. Here's wishing the gathering will prove a complete and unqualified success—the first of many more to follow.

HORTICULTURE AT GUELPH

In another column appears a letter explaining some of the difficulties under which the staff on horticulture at the Ontario Agricultural College has been working, and improvements that are needed. This letter has been brought out as a result of the criticism in these columns last month of the work being done by this department at the college. The latter really goes to prove the strength of our contention. Had the need for these improvements been pressed with sufficient vigor, it is probable they would have been secured long ago.

In the speech from the throne, at the opening of the Ontario Legislature, improvements in the work at Guelph were foreshadowed. The Horticulturist understands that considerable is to be done to strengthen the horticultural department. We trust this is the case, and will be glad to do what we can to assist and supplement the work of this branch of the college in every way possible.

A RETRACTION

The Horticulturist regrets to find that in its Winnipeg correspondence last month an injustice was done the branch of The Ottawa Fruit and Produce Exchange at Winnipeg, which was credited with having sold 300 to 350 barrels of Ontario fall fruit a day at five cents a barrel. Our Winnipeg correspondent first sent us his notes alone. These referred to the large quantities of fall apples that were being stored in Winnipeg, and that would have to be sold at prices that would demoralize the market. Later he forwarded a clipping from the Winnipeg *Free Press*, which stated that large quantities of Ontario fall fruit were being sold at five cents a barrel, as high as 350 a day having been auctioned off by The Ottawa Fruit and Produce Co. Although our correspondent did not vouch for the truth of the article, he suggested that it might be published in a manner that would tend to strengthen the point made in his correspondence. As space prevented our using the article in full separately and as it had been sent by our correspondent, we took the liberty of embodying a short note concerning same in his correspondence. Care was taken to quote the Winnipeg *Free Press* as authority for this information.

The Ottawa Fruit and Produce Exchange has written us that the information as published was false and that the Winnipeg *Free Press* has made a complete retraction of same. Instead of large quantities of Ontario apples having been auctioned off at that price some twelve barrels only were sold. These apples had been kept in cold storage by mistake through the shipper not naming correctly the variety of apples in the cars. The company further states that they have no artificial heat in their cold storage cellar to injure the quality of their apples, although our correspondent did not intend to imply that they had. These being the facts of the case The Horticulturist desires to express its regret that anything was published that did an injustice to The Ottawa Fruit and Produce Company.

The Fruit Growers of Canada Indignant

It is evident from the expressions of opinion that are constantly reaching The Canadian Horticulturist that the fruit growers of Canada are not going to be content until they have and independent fruit commissioner of their own. The feeling of dissatisfaction over the existing arrangement, by which the chief of the fruit division is under the dairy commissioner, is general throughout the Dominion. The following are views from representative fruit growers that have been received recently. Rev. Father A. E. Burke, Alberton, P.E.I., president Prince Edward Island Fruit Growers' Association: "This province, through the fruit growers' association, has protested vigorously, by a resolution sent to Hon. Mr. Fisher, against the degradation of the fruit division of the Department of Agriculture. We will continue to do so until this important branch of our national resources is placed on a proper footing and permitted to exert the measure of influence it should exert in developing fruit culture in Canada. The general feeling is that a fully authorized commissioner should direct the policy of the fruit division under the minister only, and nothing less will satisfy the organization specially fostering horticulture or the horticulturists of this country."

Mr. J. C. Metcalfe, Hammond, B.C., president British Columbia Fruit Growers' Association:—"The fruit interests of the Dominion are of sufficient importance to have a department and chief of their own. It should not be subordinate to any other department or chief The head of the fruit division should stand next to the Minister of Agriculture and should not be under the necessity of making representations through an intermediate or the chief of another department. The various problems that are continually cropping up and confronting the fruit grow-

ers, such as the changing conditions of trade and markets, transportation, cold storage, co-operation and numerous other questions, render it necessary that we should have a department and chief who could give his time and special attention to the requirements of the industry, having at the same time the direct ear of the minister without the interference of the chief of another department whose sympathies and energies are given more to the department or class of work congenial to his tastes, training and education."

Mr. S. C. Parker, Berwick, N.S., secretary Nova Scotia Fruit Growers' Association:—"Fruit growers in Nova Scotia are feeling very strongly the injustice of making the fruit department subservient to the dairy branch of the Department of Agriculture."

Constitution Changed

At a general meeting of the Niagara Peninsula United Fruit Growers' Association, held in St. Catharines, Feb. 17, the principal business dealt with was the amendment of the constitution as proposed by a committee at the last regular meeting. After considerable discussion on all clauses of the constitution a few changes were made. It was decided to drop the word "United" from the name of the association. The work and area of the association was extended from Welland and Lincoln counties, as heretofore, to include also the counties of Wentworth and Haldimand. The membership fee in future will be $1.00 per annum, which sum will include membership not only to the Niagara Peninsula Association, but also to the Ontario Fruit Growers' Association, with its many privileges, including a year's subscription to THE CANADIAN HORTICULTURIST.

It was decided to hold a series of meetings at the same points as last year, and on the following dates: Stoney Creek, Mon., March 12; Grimsby, Tues., 13; Beamsville, Wed., 14; Jordan Station, Station, Thur., 15; Queenston, Fri., 16; St. Catharines, Sat., 17.

The association is now in communication with Prof. Craig, of Cornell; Mr. Geo. T. Powell, of Ghent, N.Y.; Prof. Van Deman, Rochester, N.Y., and others, and of these one will be secured to address the meetings. Local practical men also will deliver addresses and lead the discussion.—(A.B.C.

Dominion Fruit Conference

The Ontario, Quebec, Nova Scotia and Prince Edward Island Fruit Growers' Associations have appointed the following delegates to attend the Dominion Fruit Conference to be held in Ottawa, March 20, 21, 22. The list of delegates appointed by the British Columbia Association has not been announced yet.

ONTARIO—Harold Jones, E. Lick, W. H. Bunting, Robert Thompson, M. Pettit, A. W. Peart, J. L. Hilborn (?), (W. D. A. Ross), D. Johnson, A. E. Sherrington.

NOVA SCOTIA—Ralph Eaton, R. W. Starr, G. C. Miller, W. H. Sangster, S. C. Parker. One N.S. delegate will have to be left off, and it will probably be Mr. Sangster.

PRINCE EDWARD ISLAND—Reverend Father Burke, A. E. Dewar, Professor Ready.

QUEBEC—G. Reynaud, La Trappe; J. M. Fisk, Abbotsford; N. E. Jack, Chateauguay Basin; R. W. Shepherd, Como; Robert Brodie, Westmount.

An Omission.—In the report of the annual meeting of The Horticultural Publishing Co., Limited, published in our last issue, the name of Mr. A. W. Peart, of Burlington, was omitted from the list of directors appointed for 1906.

Please accept my congratulations for the February HORTICULTURIST, which is the first issue I have seen in its new form, and I like it very much indeed. It should be of much more value to its readers.—(Prof. F. C. Sears, Truro, N.S.

The Horticultural Department at Guelph

THE editorial in the February issue of THE CANADIAN HORTICULTURIST entitled "Improvement Needed at Guelph," and claiming that the horticultural department at the College has not been as valuable to the fruit and vegetable growers of the province as they feel it should have been, has attracted a great deal of attention. One or two letters have been received claiming that the editorial did not do justice to the College, but among the rank and file of the growers the editorial has been generally commended.

The following letter, which is referred to editorially, has been received from a gentleman who is well informed in regard to the work of the horticultural department at the College. This party requested that his name should not be published.

EDITOR THE CANADIAN HORTICULTURIST:

The editorial in the last issue of THE CANADIAN HORTICULTURIST, in my opinion, does not do justice to the work of the horticultural department at the Guelph College. In the first place, I think your criticism is likely to mislead the public because they are not aware of the nature of the manifold duties devolving upon the horticultural department. Its first duty, of course, is the instruction of students. This part of the work has developed more within the last few years than the public has any idea of. When Prof. Hutt took charge of the department 13 years ago, horticulture was a minor subject on the curriculum, consisting of but a few lectures in fruit growing given to the second year. To-day it is one of the major subjects, embracing fruit growing, vegetable gardening, landscape gardening and floriculture, given throughout the year to the first, second and fourth years, and to the lady students and teachers' classes in attendance at the Macdonald Institute. Thirteen years ago the attendance at the College was less than 300 students; last year the total attendance was over 1,000 students. Yet in this time but one assistant has been added to the teaching staff of this department, and through necessity the florist has been pressed into the work in addition to his regular duties. At the Illinois Agricultural College two professors, two assistant professors and two demonstrators are employed to do the same work that three men are doing at Guelph, and Ontario does not in anyway have to take second place to Illinois in importance of horticultural matters.

Second, the horticultural department, in addition to its teaching, has to maintain a large catering department, furnishing fruits and vegetables to the College boarding-houses, and furnishing flowers and plants for the regular decoration of tables, and almost weekly decoration of other buildings for public receptions and meetings. This particular work has more than doubled since the addition of the Macdonald Institute. It has also to maintain greenhouses for public display, and to keep over 40 acres of lawn and grounds in a condition to be above criticism from the thousands of visitors who visit the College annually. For all of this work the department has been barely able to get a sufficient grant to employ the labor needed; yet it has received no credit for anything of this kind in the public accounts, and to but a limited extent in the eyes of the general public.

Third, the general public looks to the department to carry on as much investigation work as is done at the Ottawa Experimental Farm, where the members of the staff have their whole time for such work, and are not required to lecture or manage a catering department for the rest of the institution. At many of the American Experiment Stations they have a separate staff for the college and one for experiment station work. It is hardly to be expected that with all the other work devolving upon the staff at the College it can do as much investigation work as where they have nothing to do but investigation work, as has been the case, even in the Experimental Department at Guelph. You will find by referring to last year's report that much more investigation work has been undertaken at Guelph than your editorial would lead the public to believe; in fact, the staff has undertaken as much as the funds at its disposal would allow, for it has never yet had any special grant for this purpose, and what has been done has been squeezed out of the already insufficient labor grant.

An effort has been made to overcome the handicap of climate by developing the co-operative plan of work. This has been done through the Fruit Experiment Stations and through the Experimental Union, both of which the horticultural department was instrumental in organizing. Last year there were over 2,000 experimenters engaged in this work. With a promised increase in the grant for the work this year, the work has been greatly extended, and already over 1,000 applications from experimenters who wish to undertake the work this spring have been filed.

The crying need of the department is for more assistants and more financial support to enable it to undertake the work before it, and it is up to the fruit growers, vegetable growers, florists and horticulturists throughout the Province to see that their department is as liberally sustained as other departments of the College which have a well-organized constituency and good financial support at their back.

A FRIEND OF THE COLLEGE.

Excellent Work of the Toronto Branch

That the monthly meetings held by the members of the Toronto branch of the Ontario Vegetable Growers' Association will result in much benefit to the gardeners surrounding Toronto, impresses those present more forcibly at each meeting. On Feb. 3, the executive reported on the progress they had made in securing lower rates by purchasing their supplies as an association. Several firms had been seen, and it was learned that a considerable reduction in prices could be had on boxes, Paris green, etc. The matter of deciding on what firms should be dealt with was left in the hands of the committee. Several members referred to different purchases of seeds and other supplies in which they had been defrauded. It was suggested that in future, if any firm misrepresented its goods to the disadvantage of the grower the matter should be reported to the executive, and the matter be investigated. Judging from the freedom with which the discussions were entered into the members are gradually getting away from the idea that the gardener's neighbor is his greatest enemy. Each member seemed anxious to let his brother gardener know all the secrets that he had gained from his experience.

The question of "Forcing Rhubarb" was fully dealt with by Mr. Thos. Delworth, of Weston. He had tried growing this crop from seedlings, but found it difficult to obtain satisfactory results. Better returns could be had if strong, thrifty roots were used.

In discussing celery-growing, Mr. Geo. Syme, Jr., said that it was the most profitable crop a gardener could grow. His experience with three different kinds of soils had shown that sandy loam was best.

At 3 o'clock on March 3, in the Albion Hotel, the following subjects will be discussed: Early Cabbage, by J. Stevens; Celery Growing, by W. Harris; Early Beets, by A. Shuter. The members are requested to bring along any gardeners who may be interested, whether members or not.

With the Horticultural Societies

At a meeting of the directors of the Toronto soc. in St. George's Hall, on Feb. 20, steps were taken to obtain some permanent improvement in the condition of the boulevards and lawns of the city by the planting of trees and shrubs and hedges at street corners, etc., and to establish combined effort on the part of the residents of different neighborhoods. It was decided to appoint qualified persons to make suggestions for the beautification of a street or neighborhood, and interest the residents by advising them of the recommended and possible improvement, and to invite them to meet and discuss these improvet ments, and so obtain the combined effor-sought.

To stimulate the civic improvement move, arrangements have been made with Mr. J. Horace McFarland, pres. of the American Civic Improvement Assn., to deliver a lecture on or about Mar. 20. Lectures regarding beautifying home surroundings and others of a similar nature will be delivered bi-monthly during the year. The executive decided to join forces with the Guild of Civic Art, and Col. Delamere was appointed representative of the society, to work with the executive of the Guild.

DUNVILLE'S NEW SOCIETY

In January residents of the town of Dunnville held a meeting and organized a society known as the Dunnville Horticultural Society. Already our membership is approaching the 200 mark. The people of this town are interested and we expect to make Dunnville one of the most attractive towns in Western Ontario.

Officers for the year 1906: Pres., F. R. Lalor, M.P.; 1st v.-pres. Judge Douglas; 2nd v.-pres., S. W. Brown, D.D.S.; treas., L. Werner; sec., L. H. Weaver; directors, Wm. Patterson, J. H. Rowe, G. H. Brett, F. Waines, R. G. Hucks, J. A. Scholfield, C. H. Weaver, J. H. Smith, W. Fry; auditors, Messrs. A. W. Hume and G. Mussen.

BRANTFORD.

The adjourned annual meeting of Brantford soc. was held Jan. 18, when the following officers were elected: Pres., John Thresher; 1st v.-pres., A. McMeans; 2nd v.-pres., H. Waddington; sec., R. W. Brooks; treas., John H. Adams; auditors, H. F. Leonard and C. T. Errett; hon. director, J. Y. Morton; directors, Jas. P. Hoag, W. B. Wickens, D. Dempster, J. T. Rose, H. B. Adams, J. E. Baker, J. Tilley, R. J. Taylor, T. Ranson.

R. Walter Brooks, Brantford

Committees were appointed to arrange membership cards in regard to offering premiums and flower seed to the school children. Last year nearly 6,000 packages were distributed; a considerable increase is provided for this year. The secretary was authorized to communicate with the city council asking for an increased grant, and also to have some land now belonging to the city, containing about two acres, laid out with walks and planted with trees, shrubs, and perennial flowers and properly labelled with both botanical and common names, with the idea and purpose of nature study.

The society is on the eve of a very prosperous term, having a balance on hand of $160. The teachers of the public schools are anxious to have a school show of work done by the pupils to be held at the same time and place as the exhibition, but not in any way to interfere with the funds.

MILLBROOK.

During 1905 much was done by the Millbrook soc. to maintain the high standard of beauty that is found around the residences and public buildings of that town. At the annual meeting it was decided to continue distributing plants, seeds and bulbs among the members. The officers for 1906 are: Pres., A. T. Armstrong; 1st v.-pres., G. A. Duncan; 2nd v.-pres., Mrs. T. Gillott; sec.-treas., W. S. Given. Last year some members took THE CANADIAN HORTICULTURIST, and others selected other papers. This year, however, it was unanimously voted to take THE HORTICULTURIST.

HAMILTON.

At a meeting of the Hamilton soc. on Feb. 5, Prof. H. L. Hutt, of Guelph, gave a very interesting address on "The City Man's Garden." Prof. Hutt advised the members to make the best use they could of the space at their disposal in the gardens by having fruits, flowers and vegetables. He gave a number of valuable pointers, and distributed documents of an instructive character. One paper contained a list of 50 hardy perennials of a desirable kind which had been tested at the college. Mention was made of the way in which they were usually propagated. Another paper contained a list of the leading varieties of vegetables with notes on their cultivation. He also gave pointers on fruit trees.

GRIMSBY.

At a meeting of the directors of the Grimsby soc., Jan. 29, at which two very important questions with regard to the coming year's work were taken up: First, that of endeavoring to encourage the school children in the cultivation of plants and flowers. The plan presented was that of appointing a committee to distribute flower seeds to the children in the spring, with the object of having them cultivate a plot of plants and flowers at their homes, and in the fall hold an exhibition at which one department would be given over to the children, and prizes would be offered for the displays from the children's flower gardens. The committee would also have the oversight of the children's gardens during the season, instructing and encouraging them in the cultivation and attendance.

Another matter discussed was that of "beauty spots," or local improvement, and the beautification of the village and township. A committee, consisting of J. A. Livingston, Dr. Smith, H. K. Griffith and J. W. Brennan, was appointed to take steps with regard to this matter.

GUELPH.

There was a large attendance at the postponed meeting of the Guelph soc., Jan. 30. Floral songs were a special feature. A resume of the work done during the past year, given by the sec., Miss A. Rose, showed that 8 public meetings had been held; 925 packages of aster seeds distributed to pupils in the public and separate schools; an exhibition of the aster blooms held, and many prizes given; 57 trees, donated by citizens, and planted under the direction of the horticultural society, and window boxes placed on the city hall and post office.

Pres. Harris emphasized the work among the school children, and said it was most important and should be continued. Civic improvements should receive great attention. He suggested prizes for best window boxes, best kept lawns and gardens, and asked the members to be satisfied with smaller premiums that the money might be expended on civic improvements. Mr. Harris strongly urged all to become members, and so enable the society to receive the maximum Government grant, which is based on membership. The premiums for 1906 include Sweet Pea seed, Asters (Semple's branching), Gladioli, Hydrangea paniculata, Spirea Van Houtti, Rose, Gen. Jacqueminot.

The following officers were elected:—Pres., Rev. P. C. L. Harris; 1st v.-pres., E. Shuttleworth; 2nd v.-pres., Jas. Anderson. sec., Miss Annie Rose; treas., Wm. Ross; hon. director, Jas. Goldie; directors, Mayor Sleeman, Prof. Hutt, Dr. Dryden, J. W. Lyon, Thos. Till, Wm. Hunt, Jas. Gilchrist, C. C. Dawson, T. J. Moore.

PORT DOVER.

J. A. Symington, Port Dover

At the annual meeting of Port Dover soc., the election of officers resulted as follows: Pres., Jas. Symington; v.-pres., John Aldridge; 2nd v.-pres., R. M. Taylor; sec.-treas., F. J. Taylor; directors, W. J. Carpenter, J. Aldridge, W. Stamp, G. Walker, F. Ryerse, J. E. Anderson, C. McNeilledge, R. S. Fleming and M. Hodge; auditors, L. G. Morgan, W.R. Liddy.

Pres. Symington called on Mr. W. R. Liddy, B.A., to lead in a discussion on the advantage and profits of peach growing. Mr. Liddy gave an interesting and instructive address and was followed by L. G. Morgan, Jas. Symington, J. E. Anderson and R. M. Taylor.

A committee was appointed consisting of Messrs. Symington, F. Taylor, Anderson and R. M. Taylor to report on the best variety of peaches for that locality, and a resolution passed requesting the residents of Port Dover and surrounding tountry to give the growth of peaches a fair crial and report the result to the society.

A Valuable New Idea

We are in receipt of that marvellous book of strawberry lore, the 1906 issue of R. M. Kellogg's "Great Crops of Strawberries and How to Grow Them." This book is one of the handsomest of its kind in print and it is a veritable picture book, filled with beautiful illustrations of home scenes of enthusiastic strawberry growers and other characteristic views beautifully reproduced in half-tone.

The R. M. Kellogg Co. is authority on everything that relates to the strawberry and its production.

The flood of questions concerning strawberry culture, which reaches that company's office daily, has resulted in the determination of its management to establish a correspondence school of strawberry culture, in which everybody, everywhere, may receive thorough, practical instructions just when most needed. An illustrated monthly magazine will be the medium between this school and its membership.

The new catalogue issued by John A. Bruce & Co., seed merchants, of Hamilton, is full of valuable information for those interested in horticulture or general farming. A full line of seeds used on the farm and in the vegetable garden, flower garden and greenhouse is listed. New introductions are offered to the public with full descriptions and fine illustrations. This firm also carries a supply of gardeners' tools, spraying outfits and general sundries handled by up-to-date seed merchants.

Work Being Planned by the Ontario Vegetable Growers

THE various branch associations of the Ontario Vegetable Growers' Association have all held their annual meetings, and appointed their representatives on the board of the provincial association, which is now fully organized. A meeting of the executive committee of the Ontario Association was held in the secretary's office, Toronto, Feb. 7. Those present included Messrs. J. H. Lewis, of the Hamilton branch; Geo. Syme, Jr., Jos. Rush, F. F. Reeves, and Thomas Delworth of the Toronto branch; John Atkin of the Sarnia branch, Mr. Ross of the Chatham branch, A. McMeans of the Brantfort Branch, W. C. McCalla of the St. Catharines branch, and the secretary, H. B. Cowan. Mr. Robert Thompson, president of the St. Catharines branch, was also in attendance, although not a duly qualified delegate.

The secretary reported that lists of paid-up members had been received from the various branches as follows, entitling them to the number of representatives on the provincial board mentioned: Toronto, 152 members, 6 directors; Brantford 25 members; St. Catharines, 26; Chatham, 26; Hamilton, 30; Sarnia, 25; each entitled to one director.

The election of officers resulted as follows: President, F. F. Reeves, of Humber Bay; 1st vice-pres., A. McMeans, Brantford; sec.-treas., H. B. Cowan, Toronto.

Mr. Rush reported on behalf of the committee who had been appointed to interview Mr. Putnam in regard to a series of meetings for vegetable growers, that he had seen Mr. Putnam, who was willing to assist this work.

The secretary read a series of questions that had been sent to the branch associations, and the representatives from the various associations reported the decisions of their members in regard to the points raised in the statement. On motion of Mr. Delworth, seconded by Mr. Ross, it was decided to appoint an executive committee which committee should conduct the routine business of the association. On motion of Mr. McCalla, seconded by Mr. Atkin, the president, vice-president, Mr. Lewis and the secretary were appointed a committee.

The advisability of the association expending money to obtain crop reports was considered. The feeling of the meeting was that crop reports would be a splendid thing for the vegetable growers of the province, and that if they were issued properly they would be of great value. The best method of obtaining these crop reports was considered, and the expression of opinion was that it would be better to have a few men in the leading vegetable sections paid to forward letters at stated intervals covering the conditions in their sections, rather than to obtain a large number of correspondents and expect them to report for nothing. It was pointed out that such men would make it their business to acquaint themselves with the actual conditions in their districts. The matter was left in the hands of the executive committee with power to act.

The advisability of petitioning the government to appoint an appraiser whose duty it would be to examine consignments of vegetables from the United States imported into Canada and find if they were undervalued by the consignee, and where such was found to be the case to place a proper valuation on same was considered. It was decided that a deputation from the association should wait on the Dominion Government and impress on the government the urgent need for a specific duty on vegetables, but failing this the need for the appointment of a competent appraiser, whose duty it would be to watch the valuation placed on vegetables imported into Canada through the principal points of entry. On motion of Mr. Lewis, Messrs. Delworth, McMeans and the secretary were appointed a committee to wait on the government to press this matter. The committee was authorized to arrange with the growers in the Province of Quebec and with growers in the vicinity of Ottawa, to act with them in pressing this matter on the government.

The executive committee was instructed to wait on the Minister of Agriculture for Ontario, to request that experimental work in the growing of vegetables and combatting insect pests, fungus diseases, etc., be carried on much more extensively than in the past. It was stated that this committee should gain information as to what has been done in this direction not only in Ontario but in the States of the American Union.

Mr. Syme reported that the committee to wait on the officials of the Toronto Industrial Exhibition to see that the association was given proper representation on the board of management of that exhibition had seen Dr. Orr. At first Dr. Orr had not given them as cordial a reception as they felt they were entitled to receive, and it was not until they intimated that the association might be willing to make a grant to the Toronto Industrial that Dr. Orr seemed willing to give them the reception they felt they should have been accorded. Dr. Orr finally suggested that a committee from the association should meet with him and go over the prize list for the Toronto Industrial. On motion of Mr. Syme, Mr. Reeves and Mr. Rush were appointed to confer with Dr. Orr in regard to this matter.

The secretary reported that he had written to the members of parliament in the various districts of the province where it was stated that there were vegetable growers and had asked them for the names of prominent growers who might be interested in forming branches of the association. He had received a large number of replies from the members, and thought it would be advisable for a committee to be appointed to go into this matter thoroughly. One reply from the Napanee section stated that there should be no difficulty in organizing a branch at that point with 170 members. The executive committee was authorized to act as an organization committee

Messrs. Reeves, Delworth, McCalla and Lewis were appointed to represent the association on the executive of the Ontario Horticultural Exhibition.

Our Prince Edward Island Letter

Rev. Father Burke, Alberton, P.E.I.

AS the session of Federal Parliament is to be called March 8, the Horticultural Council so anxiously awaited by the fruit growers will not assemble until about the middle of that month. Meantime the schedule of questions is before those concerned, and it is the duty of the delegates to properly qualify themselves to intelligently discuss the subjects, and give a vote calculated to advance the general interests involved. Concerted action is earnestly required to remove from the region of controversy many of the burning questions that have beset the instruction propaganda of the country, and confused the public mind at home and abroad. Different sections may hold widely different views, but a policy of give and take must be adopted in many things, so that something definite may be snatched from the assembly, and the fruit interest advanced a long pace towards complete organization.

In Prince Edward Island we are deeply interested in all the phases of horticulture, from the educational to the commercial. We had a sort of paternal attention from the Federal Department of Agriculture under Prof. Robertson. Since his withdrawal from the general commissionership of agriculture for Canada, however, this department has failed us, and failed us at a most untoward time. The fruit inspectors under the Marks Act were here as instructors in the interim between crops and they did much to advance horticulture generally. They visited the neglected orchards and inspired the dejected with new courage; they brought fresh methods and new ideas to those who were busy at the work; they held meetings and aroused the whole community—and thus thoroughly awakened the province to its possibilities in fruit production.

The fruit division at reconstruction went as an appendage to the dairy division, and with this much of its usefulness, so far as we were concerned, departed. The instructors were withdrawn at the moment the province was suffering from a great loss in its orchards because of severe snow banks which resulted in the breaking down of innumerable plantations. Then spraying was withheld and instruction done away with as a specialty of our horticulture, with the result that the forward pace of other years has not been maintained.

We hope for a better adjustment of representative interests at Ottawa, and a return to the policy that helps the country forward most. Here, handicapped by our insularity, we cannot be too generously treated in the encouragement of the few pursuits that can be followed with some show of success.

Our winter is not such so far—and the worst is probably past—as to cause us any concern about our apple plantations. The weather is very mild and there is enough snow to cover the ground perfectly, but not enough to make dangerous banks such as break down trees, or afford a shelter for the mischievous mouse. The glass has seldom registered zero, and the killing back of severe seasons need not be feared. There is no ice in the straits. The conditions are unusually mild.

Workmen Fined Too

Further penalties have been meted out to those who persist in violating the Fruit Marks Act. Some time ago Mr. Jas. Coyle, of Colborne, was fined $50 and costs for improper marking. This was not sufficient to put a stop to the fraudulent practice in that section. Since the first conviction John Coyle, a member of the firm of J. and R. Coyle, apple operators, Colborne, Ont., has been fined $30 and costs as owner at the time of packing of very poor apples marked No. 1 in violation of section 6 of the act. He also was fined $5 and costs under section 4 of the order-in-council, as foreman of the men who packed this fruit.

Geo. Bachelor, boss packer for J. and R. Coyle, and A. Turney, boss packer for F. C. Morrow, were fined $5 and costs under section 4 of the order-in-council. Other convictions under section 6 of the Fruit Marks Act were: C. A. Nugent, fined $5; F. F. Snelgrove, $12.75; R. D. Snelgrove, $6.50; and J. D. Osborne, $6, with costs in each case.

In the case of the workmen, Messrs. Bachelor and Turney, there was no desire to be particularly severe. It was only where there was the clearest evidence of the workmen knowingly assisting in perpetrating a fraud that the fruit inspectors felt justified in prosecuting the laborers in the packing houses.

Seed Potatoes.—Smith Bros., of Beachville, have worked up a large business in seed growing. Last year ever 1,000 bushels of potatoes alone were grown for seed. This firm is carrying on a very important work in selecting from the finest of the finest each year. The Eldorado potato, mentioned in their advertisement in this issue, is highly spoken of as a heavy cropper and good quality. Smith Bros. are members of The Canadian Seed Growers' Association, and sell seed stock with registered pedigrees.

Spraying Pointers from Practical Sprayers

THE practical value of spraying becomes more and more evident as the seasons go by. Insects and fungi are becoming more numerous and are constantly changing their habits from one class of plants to another. Man is constantly enlarging the number of these foes by increasing the area of cultivated plants upon which they feed. Competition itself, which is the life of the fruit trade as well as all other branches of commerce, forces fruit growers to realize the necessity of spraying by elevating both the ideals of the growers and the demands of the market.

Government aid and legislation also have done much to encourage the practice of spraying, while there are some insurmountable difficulties in the enforcement of pest laws; yet, their value to the fruit industry of this country has been and is much greater than most people realize. Our pest laws have helped to keep out of the country many serious plant and tree troubles; they have demonstrated to the practical grower the practical value of spraying in holding within bounds the San Jose Scale and other pests now in the country; and also they have materially controlled the distribution of plant diseases and fungi that are more or less permanent or perennial, such as peach yellows and the black knot of the plum and cherry.

SODA BORDEAUX AND PARIS GREEN

In the Niagara district last year some growers suffered loss through the application of soda Bordeaux and Paris green to fruit trees, particularly in the case of cherries. Some time ago Professor Shutt, of Ottawa, and Professor Lochhead, of Guelph, recommended the use of this mixture on potatoes; they did not recommend its use on fruit trees. Many practical growers used it on their cherry and other trees—which they were free to do if they wished—and as a result considerable damage was done. Now, some of these growers are throwing the blame on the officials at Ottawa and Guelph. At the fruit growers' convention held in Toronto last November, Professor Shutt explained the cause of the damage as follows: When the compound that makes up soda Bordeaux comes in contact with the compound Paris green, the soda of the soda Bordeaux enters chemically into combination with the arsenic of the Paris green and forms a new compound known as arsenite of soda, which is known to be harmless when applied to the potato plant, but very injurious to fruit trees.

THE CARE OF NOZZLE AND OUTFIT

Mr. W. H. Brand, Jordan Station, Ont., who has had many years' experience with various makes of spray pumps, gave the writer some general information in the following words: "From many people we hear a howl about the difficulty in starting up their spraying outfits after they have been idle for a period. A great deal of this could very easily be avoided if sprayer operators would spend about five or ten minutes in washing out by running perfectly clean water through the machine pipings, valves, etc., and by taking off the nozzle heads entirely and placing them in a bucket of clean water, there to remain until wanted again. Being of either brass or aluminum they will not rust. Spraying outfits would be longer lived if accorded better care and better winter and summer housing."

STRAIN THE MIXTURE THOROUGHLY

"A large number of sprayer operators are astray in their preparation of mixtures, containing lime, sulphur, or other such ingredients from which a sediment forms or in which may be at the outset coarse particles. All such mixtures should be run through three screens, viz., first a 20-mesh, next a 30-mesh, and finish through a 40-mesh, (a 50-mesh would be still better).

This removes particles which are not of the slightest value but which prevent free flowing through very fine nozzles, which are best for finest atomizing. Spraying with the air current or wind saves from ¼ to ⅓ of the mixture and means *money*. Free flowing means less *time* spent in stops to clean out clogged nozzles and waste of material while so doing."

AN EXPERIMENT WITH SCALECIDE

Early in December last Mr. W. H. Bunting, of St. Catharines, made an application of Scalecide, in the proportion of two gallons to forty gallons of water, to plum, pear and peach trees badly encrusted with scale. On February 20 he examined the trees in company with your representative, and compared them with unsprayed trees in adjoining rows, and found no apparent injury to the trees from the application of the Scalecide. After a careful examination under the glass, he came to the conclusion that while not all have been killed a very large percentage of the scale has been destroyed. Mr. Bunting has forwarded samples of sprayed twigs to Professor Lochhead of Guelph, and to Dr. Fletcher of Ottawa, for further examination. At a later date we hope to publish further details.

Scalecide was tried this winter also by Mr. F. G. Stewart, Homer, who cites his experiences as follows: "About the middle of January I applied this mixture in the proportion of one gallon to 20 gallons of water, using about one gallon to a tree. I examined the trees early in Feb., and found that the scales were loosened and could easily be rubbed off the bark with the fingers. I think that most, if not all, of the scales have been killed. If further examination confirms present results, I shall use Scalecide in my orchards in future instead of lime and sulphur."

SULPHUR FOR PLUM ROT

Mr. Murray Pettit, Winona, said that plum rot can be controlled by dry sulphur dusted through the trees. Two applications should be made; first, when plums are just formed; and second, two weeks later. Mr. Pettit has tested the sulphur treatment on rows side by side with trees treated with Bordeaux mixture, and found the former to be the better.

IS SPRAYING NECESSARY?

In interviewing fruit growers I occasionally find a man who objects to spraying. Some have never given the operation a trial, and others have tried it and obtained no results. Both these classes of growers should bear in mind this fact—healthy foliage in fruit trees is necessary one year for the crop the following season. If a grower has an orchard with foliage that is vigorous and free from all kinds of tree troubles it may be a waste of time and expense to spray—but the grower cannot always be sure that his trees are immune, even in the face of good appearance. In the other case, good results from spraying may not be evident the first year, particularly when badly infected orchards are treated the first time. Spraying should be done regularly each year.

The opinion of Mr. W. E. Gorman, Stoney Creek, is this: "There is more in keeping the trees healthy by treating the ground with desirable food and good tillage than in doctoring the tree after it is diseased." Mr. A. O. Bowslaugh, Grimsby, is another grower with the same opinion; also Mr. J. W. Nash, Stoney Creek. This theory of making trees resistant is good as far as it goes, but practical experience and experiment has not proved it infallible. A case can be cited, at Jordan Harbor, where some apple orchards non-sprayed but otherwise well cared for, yielded less than 25 per cent. XXX stock; while in the same locality sprayed orchards yielded a much larger average, notably the orchard of Mr. W.S. Duncan, which last season yielded 12 XXX barrels for every one of XX stock.

THE CARLSON MIXTURE

A spray mixture for the San Jose Scale that is commanding considerable attention in the St. Catharines district is one originated by Mr. John Carlson. Many growers have tested it and all whom I visited were well pleased with the results. "I have used many spray mixtures including the lime and sulphur wash, and Carlson's, and with me the latter has given best results," said Mr. H. B. Kottmeir, St. Catharines "Last spring I applied Carlson's mixture to a plum orchard so badly infected that I was about to cut the trees down, and now the trees are clean and healthy. I applied the regular strength, 4 gallons to 40 gallons of water, on trees seven years old and the cost of labor, material and all amounted to only five cents a tree—on calm days it cost less. The beauty of this mixture is its cleanliness on operator, horse and apparatus."

This mixture was used last spring also by Mr. Archibald, who is working a farm for Mr. Edward McArdle, St. Catharines. In the same orchard he used lime and sulphur and Carlson's mixture and found that fruit from trees treated with the latter was the better in quality and appearance—pears brought 10 cents a basket more than those from trees sprayed with lime and sulphur. "On some trees," he said, "I used the mixture where pears and plums were half grown and infected with scale and it cleaned the fruit for market. Carlson's mixture can be used when trees are in leaf, if diluted one half; that is, two gallons to 40 gallons of water."

The New Method of Killing San Jose Scale

It has long been known that petroleum oils would kill San Jose Scale if they could be mixed with water so as to be conveniently applied. That Scalecide is such a practical triumph is shown by letters from growers and by references in bulletins, etc. It is a perfect mixture of oils that effectively penetrates the scale, causing it to curl up and die, and fall off. This new preparation is said to supplant the lime-sulphur wash with its bothersome preparation, boiling of ingredients and danger of serious injury to the clothes and hands.

Prof. R. L. Taft, Horticulturist Michigan Agricultural Experiment Station, wrote of Scalecide, "I find that the results of the winter application has been quite satisfactory as, judging from the results on peach trees, considerably less than one per cent. of the adult scales escaped treatment."

Prof. John B. Smith, Entomologist New Jersey Agricultural Experiment Station, New Brunswick, N.J., wrote: "I believe that applied at the right time and in a thorough manner, this is as good, if not a better remedy for this pernicious insect than any we have up to the present time."

For further testimonials from fruit growers and experiment stations, and for samples, address, B. G. Pratt, Company 11 Broadway, New York.

Horticulture in the West

THAT horticulture is increasing in the west as the population grows was shown by the interest taken in the sessions at the annual meeting of the Western Horticultural Society, held in Winnipeg, on Feb. 14 and 15. Horticultural subjects were ably dealt with, and the vast importance of forestry dwelt on. It was decided to hold an horticultural exhibition in Winnipeg this year in August or September. A resolution was passed asking for the establishment of experimental stations in horticulture throughout the country in connection with the Dominion Experimental farms. Other resolutions asked the western provincial Governments to endeavor to check the prevalence of prairie fires, which are very destructive to timber areas within the prairie region and endorsed the recent forestry convention at Ottawa.

The election of officers resulted as follows:—Pres., W. G. Scott; 1st vice-pres., A. P. Stevenson; 2nd vice-pres., John Caldwell; secretary, Geo. Batbo.

The president, Mr. D. W. Buchanan, in a short address at the opening session referred to the prosperous condition of the society, which had nearly quadrupled its membership during the past year, increasing from about 60 to 200 members. This result he attributed to increased attention throughout the country to horticultural work, to the increase in population and general advancement of the country, and to the energy with which the society had been conducted during the year. They had passed the experimental stage in growing many kinds of fruits, he said, and in some cases some of the small fruits were being grown on a large scale in a commercial way. Some large shipments of local grown strawberries had been received in Winnipeg during the year. The chief difficulty in growing small fruits was the scarcity of help and high wages. Land around Winnipeg was getting too dear for ordinary farm purposes, and it would be necessary to encourage horticulture in order to make their lands profitable. In tree fruits progress was being made, and many apple trees were coming into bearing in the Red River valley and some other sections of the country, so that the problem of growing tree-fruits was also being solved.

The secretary in presenting the annual report, reviewed the work of the society during the year. He referred to the free distribution of plants to the members, which helped to increase the membership. The society also published a list of trees, shrubs, fruits, etc., showing what varieties are hardiest and best adapted to growing in this country, and it, too, was sent to the members.

The treasurer's report showed that a surplus remained on hand notwithstanding the heavy expenditures.

At a public meeting on the evening of the 14th, Dr. Fletcher, of Ottawa, gave a very interesting address on nature study, illustrating his remarks with limelight views. President Creelman, of the Ontario Agricultural College, spoke on the need of more practical education in the public schools.

The remaining sessions were devoted to discussions of questions pertaining to practical horticulture. One of the most interesting papers was that given by Norman M. Ross, who has charge of the Dominion Government forestry work in the west. Mr. Ross said that trees could be grown for fuel, fencing, etc., very profitably in the prairie provinces, and recommended the box elder, white elm, green ash, cottonwood, basswood and the native spruce and tamarac.

Dr. Sheeckly, of Pilot Mound, Man., discussed the shrubs and flowers best suited to this country. For hedges he preferred the common lilac, as it holds its foliage late in the fall. A paper on potato-growing in the Winnipeg district was read by W. H. Tomalin. He spoke of the potato blight, which was unknown here until lately, but which was bad last year. So far no spraying had been done in Manitoba. Dr. S. J. Thompson, of St. Charles, Man., explained his method of growing small fruits, in which he has been very successful, with currants, gooseberries and raspberries.

A. McLeod, of Morden, Man., said that at first he did not succeed in growing tree fruits, but after planting wind breaks and shelter belts, he had been able to grow apples, crabs and plums. W. G. Matthews, of Macleod, Alta., spoke on horticulture in Southern Alberta. He had been able to grow many trees without artificial watering.

A paper on roses and flowers was given by Mrs. J. B. Hodgson, of Foxwarren, Man., and addresses were delivered by J. B. Merril, J. D. Carwell, Alf. Andrews, James T. Drysdale and Robert Atkin

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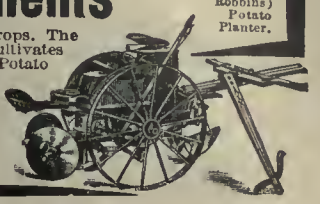
Pickers and packers should be required to obtain a certificate before they are allowed to begin operations. Some of the work is done so poorly that one would think crazy men had been at it.—(P. J. Carey, Dominion Fruit Inspector, Toronto.

Your Spring Help

What kind of help will you have this spring. Will you do your work the old way with many men and much expense, or employ the time-saving, labor-lessening and money-making

IRON AGE Implements



These implements comprise tools for the cultivation of all crops. The No. 6 tool shown, prepares the ground, sows the seed and cultivates the growing crop. The Iron Age (Improved Robbins) Potato Planter has no competitor. The only planter *performing absolutely perfect work.* Riding and Walking Cultivators, Sprayers, Hoes, Drills, Potato Diggers, etc., all are shown in the New Iron Age Book. Most complete and instructive book on crop raising published. Write for it. It's Free.

BATEMAN MFG. CO., Box 516, Grenloch, N. J.

New Brunswick Fruit Growers are Progressing

THE second annual convention of the New Brunswick Fruit Growers' Association was held at Fredericton on Jan. 25. A committee comprising Messrs. W. W. Hubbard, Henry Wilmot and W. A. McIntosh, appointed to consider the suggested topics for discussion at the Dominion Fruit Growers' Conference, submitted the following report, which was adopted by the association:

1. We suggest that the work already started by the fruit division of the Department of Agriculture in regard to statistics and fruit crop reports, should be encouraged, and that fruit-growers everywhere should furnish statistics and crop prospects within their reach promptly when requested by the division.

2. That an extension of cold storage and refrigerator car service is urgently needed, and that the rates of the express companies operating in Canada should be brought under the supervision of the Railway Commission. We believe that the rates charged by the express companies seriously interfere with the development of our fruit interests.

3. In addition to recommending that there be a uniform barrel for Canada, we would suggest that more expeditious means than exist, be provided to prevent the use of barrels and other fruit packages below the legal size. Our federal department should be urged, in every way, to safeguard and develop our export trade, and to make conditions as easy as possible for trade within the Dominion.

4. It is regrettable that many of our best grocers consider that to be sure of getting pure fruit jams and jellies they must import them from English manufacturers, and we would suggest that the Department of Inland Revenue be asked to give this matter their special attention.

5. Fruit growers would be in a safer position if such control were exercised over nurseries, that their owners, before they could legally collect money for trees sold, should be compelled to hold a certificate from a competent inspector stating that their stock was free from dangerous scales, insects, or diseases.

6. We would suggest that the following definition for number 2 fruit be embodied in the Fruit Marks Act:—"No. 2 Apples shall consist of well-grown specimens of fair size, color and shape, and not less than 85 per cent. free from scab, worm holes and other defects, and packed in the same careful manner as provided for No. 1 fruit."

7. We would recommend that our delegates examine into the moves that have been made in the direction of horticultural education in the different countries of the world, and be in a position to assist in making such suggestions as may be in the best interests of Canadian horticulture.

8. Your committee would recommend that our delegates give this subject thorough investigation and consideration, and make such recommendations as will, in their judgment make our fruit exhibitions more educational to both producer and consumer, more encouraging to the growth of the best commercial varieties adapted to the district, and in every possible way calculated to encourage the growth and disposal of our fruits.

For 1906 officers were elected as follows: pres., John C. Gilman, Kingsclear; v.-pres., I. W. Stephenson, Sheffield; treas., Henry Wilmot, Sunbury; sec., T. A. Peters, Fredericton; directors, J. W. Clark, Sunbury; J. F. Tilley, Carleton; William McIntosh, St. John; John Ferguson, York; S. B. Hatheway, York; George McAlpine, Queens; Mr. Richardson, Charlotte. Pres. Gilman and Mr. Isaac W. Stephenson, of Sheffield, were appointed delegates to the Dominion Conference.

Among the speakers were Mr. W. T. Macoun, Ottawa; Prof. F. C. Sears, Truro, and Mr. W. A. McIntosh, of St. John, N.B., the leading entomologist of the maritime provinces. A very creditable display of apples was made, and before the close of the sessions a motion to have a fruit exhibit at the next annual meeting was carried.

Mr. Macoun and Prof. Sears judged the fruit exhibit, the following being the prize winners of the varieties named: J. C. Gilman, Fredericton—Fameuse, McIntosh Red, Alexander, Milding; Geo. McAlpine, Gagetown—Wolf River, Bishop Pippin, Ontario, Golden Russet, King of Tompkins, Northern Spy, Gano, Ben Davis; Henry Wilmot, Lincoln—Wealthy and a Seedling; S. B. Hatheway—Canada Red; Rev. T. Hunter Boyd—Stark; collection of 10 varieties—Geo. McAlpine, Gagetown, and J. C. Gilman, Fredericton; collection of five varieties—Geo. McAlpine and J. C. Gilman.

Pres. John C. Gilman opened the meeting with an admirable address, in which he referred to the extreme cold of the winter of 1905, which pointed out to fruit growers the great advantage of planting hardy varieties. The midsummer drought, on the other hand, showed the vital need of a generous supply of plant food and sufficient moisture in the soil to maintain a steady growth. After impressing on the growers the importance of having only the best fruit for the markets, the president said that the best way to increase the percentage of number one fruit was to start at the beginning and get the right varieties. Then prepare the ground, as any good farmer would, for a crop he expected to yield a good return; cultivate and keep up the fertility; fight the insect pests; have a good spraying equipment, and use it at the right time and often enough to answer the purpose; nip back and prune off all unnecessary growth; give the air and sunshine a chance to help you; use proper ladders, baskets, barrels and boxes; grade to comply with the Fruit Marks Act; haul on spring wagons, and see that every operation is done with care.

In discussing injurious insects, Mr. W. A. McIntosh, of St. John, N.B., whose collection of New Brunswick insects exceeds 14,000 specimens, gave an interesting address illustrated with large colored plates and also specimens of the insects in their various stages.

Mr. Macoun pointed out that it was difficult to get a good winter apple on a thoroughly hardy tree, because an apple that will keep well means one that is not matured, and if the apple is not matured, the tree is almost certain not to have its wood hardened up in time for early frosts. The Milwaukee was referred to as the nearest to a northern grown winter apple known. He recommended it as a good tree to plant as a filler between rows, but would not advise planting it extensively as a better winter variety might soon be discovered.

Prof. Sears gave a talk on pruning, illustrating his lecture with the shears, as he talked.

Ideals in British Columbia

W. J. Brandrith, Sec. British Columbia Fruit Growers' Association

SOME maintain that the fruit grower in British Columbia has set himself too high an ideal, and that when he comes in competition with the fruit growers of the rest of Canada he will have to come down a peg. These prophets will be surprised to hear that instead of reducing the grade, the British Columbian intends to raise it. We put the chip on our shoulder in 1904 when a display was made at the Dominion Exhibition in Winnipeg. Last year, in New Westminster, prizes such as were never offered in Canada before were hung up with the hope of inducing competition from the rest of Canada, and in order that there should be no hint of partiality, Prof. H. E. Van Deman, of Washington, D.C., was secured as judge. As at Winnipeg, so at New Westminster—growers from other parts of Canada were conspicuous by their absence.

Personally, I do not place such a high value on the gold medals British Columbia fruit has been winning in England as do some people. They are good advertising for British Columbia, but when I see in the market reports that Ontario apples are selling in Winnipeg for $3 to $4 per barrel, and at the same time British Columbia apples are selling in the same market at $1.25 to $1.75 per box, I ask myself why this is? It can be answered only by calling to mind the high ideals of the British Columbia fruit grower. To-day, in our own market, apples are retailing at $1 to $2.50 per box. It is the apples packed by the man with high ideals that bring the latter price. It is too early yet to predict what the crop of 1906 will be. So far there has been no damage by frost or snow. The output for 1905 was about double that of 1903, and barring accidents, will nearly double again this year.

With rapidly increasing home consumption, and the enormous emigration to Alberta and Saskatchewan, we have no fear of the market. As soon as satisfactory rates to eastern cities can be obtained there will be a certain market there for choice apples and pears from this province.

Apples for Burlington District

In discussing the best varieties of fruits for the different sections of Ontario in the last issue of THE HORTICULTURIST an omission by the printer caused an error in the Burlington list that resulted in the placing of the leading varieties for domestic purposes under the commercial list.

The paragraph relating to Mr. A. W. Peart's recommendations for that district should read "For commercial purposes: Duchess, Ribston Pippin, Blenheim Pippin, Greening, Baldwin, and Northern Spy. For domestic purposes: Astrachan, Sweet Bough, Gravenstein, Wagener, Seek-no-Further and Golden Russet.

Modern Garden Methods

Think what a change it must be from the tiresome labor of old-fashioned garden planting by hand, to be able to open the ground, plant and cover seed at any desirable depth or spacing, at a single operation and at an easy walking gait! Yet this is just what is made possible by the use of the Iron Age Implements made by the Bateman Manufacturing Co., of Grenloch, N.J.

The No. 6 Iron Age Combined Double and Single Wheel Hoe, Hill and Drill Seeder, cut of which is shown, can be changed in a moment from a seeder to do any of a dozen different kinds

of garden cultivation. It can be adjusted to work one or both sides of a garden row, to cultivate to or from the growing plants; to rake, plow or hoe; or many of the attachments can be used to advantage in combination.

This too, however, is only one of many of the wonderful Iron Age labor saving implements. Every farmer or gardener will find a vast amount of valuable information in the New Iron Age Book, which will be sent to any address free on application. This book describes and illustrates the full line of Iron Age Implements, comprising Seeders, Wheel Hoes, Cultivators, Horse Hoes, Fertilizer Distributors, etc. Also a full line of Potato Machinery, consisting of Planters, Sprayers, Cultivators and Diggers.

Write to the Bateman Manufacturing Co., Box 516, Grenloch, N.J., or to J. A. Simmers Seed Co., Toronto, for a free copy of this valuable book.

Hints and Helps

A book of special interest to amateur horticulturists has been issued by H. D. Hemenway, Director of the School of Horticulture, Hartford, Conn. This book has been prepared with a view to furnishing a low-priced guide to school and home gardeners, and is of value not only to youthful gardeners but also to those young in experience. Directions are given for planning the garden, for fertilizing, cultivating, and the methods to be followed clearly outlined in each case.

The making of hotbeds, window gardening, strawberry culture, asparagus culture, seed testing, tree planting and numerous other subjects of interest to general gardeners are fully dealt with. A table has been prepared for both vegetables and flowers, giving the particulars regarding the method of planting, the time of planting, and general culture of each. The book sells at 35 cents.

Sprays More Than Grapes.—An error in the punctuation of the extract from Henry L. Roberts' letter used in connection with the Wallace Sprayer advertisement in the Feb. issue of THE HORTICULTURIST made it appear as though the "Duplex" power sprayer maintained abundant pressure for grapes only. This extract should have read "My Wallace Power Sprayer (a 'Duplex') has always worked well; also maintained abundant pressure. For grapes, etc., I use only one pump and find it ample."

The catalogue recently sent out by Flansburg & Potter of Leslie, Mich., contains much that is of interest to the grower of small fruits. Several pages are devoted to information regarding strawberry culture and the description of the leading varieties handled by that firm. In raspberries the New Eaton is mentioned as being one of the best red raspberries for the commercial gardener.

BRUCE'S SWEET PEAS

We have a magnificent collection of these beautiful flowers, over 60 of the newest and best varieties; we offer:—

Royal Nosegay Collection—1 pkt. each 10 superb varieties; each separate and named for 25c., postpaid.

Novelty Collection—1 pkt. each 6 of latest sorts; each separate and named for 25c., postpaid.

Bruce's Finest Mixed—Mixed from named sorts by ourselves; pkt. 5c., oz. 10c., ¼ lb. 20c., ½ lb. 35c., 1 lb. 65c., postpaid.

Grand Collection—1 oz. each of 20 distinct varieties; each separate and named for $1.00, postpaid.

Latest Novelties—HELEN PIERCE, bright blue mottled on white ground; GLADYS UNWIN, finest pink, each 10c. per pkt.

Send for our new 96 page Catalogue of Seeds, Plants, Implements, Poultry Supplies, etc. FREE to all applicants.

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DID YOU SEE EXHIBITED AT ST. LOUIS THE NEW CRIMSON RED CANNA

Mrs. Wm. F. Kasting?

Height, 3½ feet. Most brilliant in color, most prolific of all Red Cannas. Blooms all the time, and is exceptionally fine for conservatory decorations. You will need it in your business. Awarded, on its merits, a GOLD MEDAL at the World's Fair, 1904.

West Seneca, N.Y., U. S. A., Sept. 15, 1904.

Mr. Wm. F. Kasting,

Dear Sir—In our trial grounds this year, the Canna, Mrs. Wm. F. Kasting, was by far the best of its class; both in richness of coloring and in freedom of bloom. It has been a sheet of dazzling crimson from June up to the present time and promises to be good for a month to come. I consider it a most valuable acquisition and shall need a large bed of it next year. Respectfully, JOHN F. COWELL.

Prices for Bulbs, $2.00 per Dozen $15.00 per Hundred $100.00 per Thousand Delivery now up to April

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Has long been noted as the home of reliable nursery stock.

¶ Our long experience and the care given even the smallest orders, have made for us the reputation of being the leading nursery in Canada.

¶ Our stock is always true to name; only one grade, and that the best.

¶ Place your orders early to ensure your receiving stock at the right time.

¶ Send for our beautiful catalogue.

THE
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This class of plants, familiarly known as **Old-fashioned Hardy Garden Flowers**, has come into public favor again so rapidly as to astonish even the most sanguine enthusiast of these gems of the garden. Their popularity is not at all surprising when we consider the many varied and pleasant changes which take place throughout the entire growing season in a well-arranged hardy border, in which every week, yes, almost every day, brings forth something fresh and new. Early flowering varieties open up their flowers often before snow has entirely disappeared, and continuing with constantly changing variety throughout the summer until late in fall, when severe freezing weather only will stop persistent late bloomers.

SIMMERS' COLLECTIONS
OF OLD-FASHIONED
Hardy Perennial Plants

These are prepared especially for those who are not acquainted with this class of plants, and are composed exclusively of the easiest-growing, freest-flowering varieties, and also covering the longest flowering period.

6 distinct species, our selection, postpaid						$ .90
12	"	"	"	"	"	1.75
25	"	"	"	"	"	3.25

J. A. SIMMERS
SEEDS—BULBS—PLANTS
TORONTO, ONTARIO

Money Given Free to People who buy Goods from Advertisers in this Issue. See Notice in Advertising Columns.

POULTRY DEPT.

Conducted by
S. Short Ottawa

IN the February number of THE HORTICULTURIST it was recommended to beginners in poultry-keeping, in fact to all who do not keep pure breds, to make an investment at once in a trio of any of the pure breeds which could be purchased, preferably in Canada, and usually from a near-by fancier. A reasonable figure for a fair trio is $5.00. This statement I will endeavor to prove.

At the beginning of March all hatching plans for this season should be fully mature and the breeding birds in the breeding pens. In support of the statement made above I am quoting the figures supplied me by a lady in this neighborhood who began last summer to hatch and raise chickens artificially. Her experience will be of interest in that it will show the outlay that a beginner may expect to make, and also what it costs a poultry keeper to raise pure-bred chicks to maturity, and then to sell them at less than $5.00 a trio would mean to sell them without profit.

I had the privilege of visiting the yards of the lady whose experiences I am giving, and can therefore vouch that the strictest economy was used and care taken to prevent waste, while giving the chicks ample rations. Any mishaps that took place were such as a beginner might expect to have. Accidents and misfortunes are the price of experience. At the end of January the pens contained about 50 very good specimens of Barred Plymouth Rocks, chiefly pullets, several of which were laying. The cost of the eggs from which these birds were hatched, and the food and other expenses are as follows: 220 Barred Rock eggs, $15; coal oil (2 hatches), $4.50; food, straw, sand, etc., $33.77. This gave a total expenditure of $53.27. The receipts in that time were: 14 eggs at 50 cents a dozen, or 58 cents, and chicks used and sold, $11.10, or total receipts of $11.68. This, then, leaves the actual cost of the 50 fowl to be $41.59, about 83 cents per head.

A trio eight months old, therefore, will on the average actually cost the producer $2.49. Selling at $5 leaves a profit of $2.51, from which the producer or fancier has to deduct the cost of management, care, advertising, shipping, coops, and sometimes cartage to express office. Under these circumstances no fair-minded person will say $5.00 a trio is an exorbitant price.

The question is often asked, "How much will it cost to start keeping fowl on a small scale?" Below will be given the exact expenditure in detail, regarding the chicks hatched, how they were fed and all about them. They represent the experiences of the lady beginner whose figures have been used already in this article. This lady had very little, if any, experience in poultry keeping, and was guided always in the operation of the incubator by the instructions supplied with it. The very successful hatches speak well for the machine—a new one never before used—as well as for the watchfulness and care of those who operated it.

The items are as follows: Expenses—Incubator, $22.00; 120 eggs (Barred Rock, 1st hatch May 24), $8.00; 120 eggs (Barred Rock, 2nd hatch June 22), $7.00; brooder (second hatch), $3.60; coal oil, $4.50; wire for the run-way, $1.00; thermometer, 40 cents; lumber, 54 cents; new burner, wick, etc., 17 cents. From this total expenditure of $47.21 the first hatch gave 75 and the second 77 chickens. The cost of feeding until eight months old was as follows:—Puritan food for small chicks, $5.24; grain (wheat, oats, cracked corn, barley, $17.38; ground food (corn and shorts), $3.85; straw for scratching pen, $3.00; grits, 35 cents; sour milk, 25 cents; cabbage, 70 cents; sand for pens (2 loads), $3.00; giving a total cost of $33.77

By the end of July the 152 chicks had dwindled to 90. By keeping the brooder too hot 38 had been smothered at one time. Over-crowding at night killed the others. All were healthy.

These figures show for the first outlay to begin on a fairly extensive scale, $50.00 will be required for implements, lumber, etc., all of which with care will last for years. Then there is the cost of a building unless there are some sheds that can be converted into poultry houses, as was done in the case here quoted.

It might be said that it would be cheaper to use hens for hatching the eggs. I have not met

The Herbert Raspberry

The Earliest, Hardiest, Finest Flavored, Most Productive Red Raspberry. See Particulars in February Horticulturist. 40c. each; $4.00 dozen; $25.00 per 100

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Sure Growth
COMPOST

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A few good Breeding Pullets to spare at $2.00 each. In White Wyandottes we have several fine Cockerels at $2.00 each—good value. Eggs in season from both breeds at $2.00 per 13. Utility stock at $1.00 per 13.

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Plants For Sale

Every garden should have an extra early and extra late variety to expand the season of fruiting to its full limits.

SPECIAL OFFER—60 early and 60 late plants sent postpaid to any address for $1.00.

Attractive prices on thousand lots of Haverland, Parker, Earl, and Williams. TERMS cash with order.

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CANADA'S GREATEST NURSERIES
Offer Four New Specialties for Spring, 1906

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THE MAYNARD PLUM

Mr. Luther Burbank's greatest plum. In the Maynard we believe Mr. Burbank has reached the point of perfection.

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A new mammoth French Asparagus. Early. Largest size and most productive. A bunch of 20 stalks weighs 2 lbs. Strong 3 yr. old plants.

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Earlier than Marlboro. Continues a long season. Fruit large, bright red, best quality and exceedingly firm. Canes vigorous and hardy. Order at once as supply is limited.

Send for full particulars and special circulars fully describing the merits of these New Specialties.

Why not put your spare time to profit this winter in selling these specialties and other high-class nursery stock in Fruits and Ornamentals? Liberal Inducements. Write for terms.

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Fonthill Nurseries, over 800 acres. TORONTO, ONTARIO

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Spray your trees for the Codling Moth and all Leaf Eating Insects with the Best and Safest Poison which is

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("THE IDEAL")
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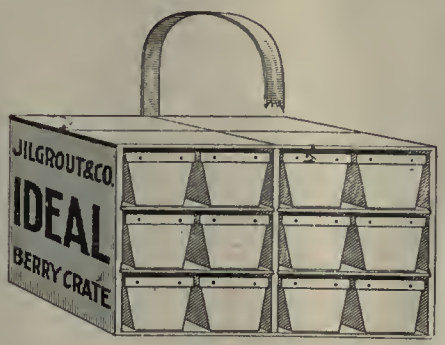
PACKAGES



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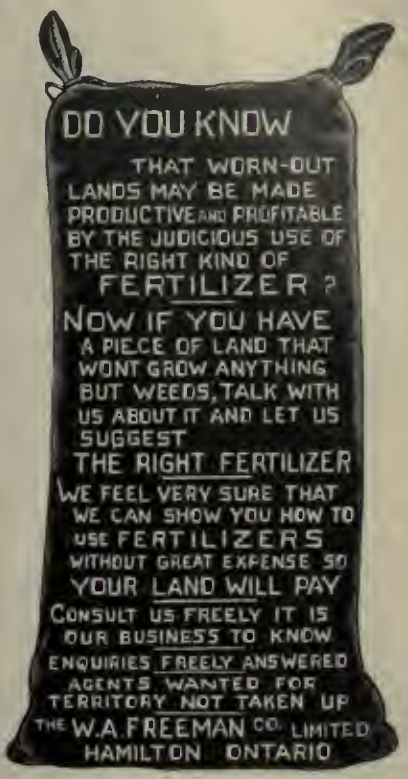

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The most sensational potato in price and produce of all time is the "ELDORADO," introduced in Spring of 1903 by Mr. John Feudlay, Mr. Geo. Massey selling in December of same year 14 pounds for $7,000,00. In Spring of 1904 Mr. Alfred Dunham paid $250.00 for one weighing 5 ozs., and smaller ones sold at rate of $1,250.00 a pound. In February, 1904, Mr. Chas. Neidham, Lincolnshire, paid $30.00 for an Eldorado weighing only ½ an ounce or three times its weight in gold. SO MUCH FOR THE PRICES, NOW FOR THE PRODUCE—

This ½ ounce potato raised the first year 361 pounds; 5 roots weighed separately over 12 pounds each, the heaviest being 14½ pounds, 11 roots weighing 110 pounds; one of the largest potatoes weighed 2 pounds, 12 weighed over 16 pounds, and out of the total 100 potatoes weighed 100 pounds.

To those unaware of the history of this potato these statements may sound incredible but they are facts absolutely beyond the shadow of dispute.

The Eldorado is rot and blight proof. It is this feature together with its most wonderful cropping qualities that has built up a record never before dreamed of.

In spring of 1905 we imported direct from the originator some at a cost of $16.00 a pound, one pound of which under our ordinary field test alongside 26 varieties yielded 148 pounds of the finest potatoes we ever dug. They are in shape an elongated oval, with white, slightly russetted skin, shallow eyes, and finest cooking qualities.

The prodigious cropping qualities of this potato enable us to offer them for the first time in Canada at a price that all can pay. Every sale accompanied by copy of the original bill from Mr. Fendlay. Every pound sent out warranted true Eldorados.

$1.00 Per Pound (Only a limited quantity)

We also offer Fendlay's Star, cropped 1,500 bushels to acre, sold 5 years ago $100.00 each, at 50c. pound. Also Gold Coin, Toraton Beauty, Irish Cobbler, etc., 26 varieties, the only registered pedigreed seed potatoes offered in Canada.

Strawberry Plants $1.50 per 1,000 up

Cardinal, New Home, Commonwealth, Dunlop, Hathaway, 60 others selected pedigreed. RASPBERRIES: King, Loudon, Eaton, Cumberland, etc. BLACKBERRIES: Mersereau, Rathbun, etc. Get our list before ordering.

SMITH BROTHERS, BEACHVILLE, ONTARIO

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PRATT'S **"SCALECIDE"** SOLUBLE PETROLEUM

A POSITIVE REMEDY FOR

SAN JOSE AND COTTONY MAPLE SCALE, PSYLLA, ETC.

SEE ARTICLE ON NEW METHODS OF KILLING SCALE ON PAGE 70

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Big Results from Fertilizers.—Messrs. S. & W. H. Collinson, proprietors of the Meadowbrook Fruit and Stock Farm, St. David's, Niagara Township, breeders of pure bred Holstein-Friesian Cattle, have over 70 acres in orchard, divided as follows: 50 acres peaches, mostly young orchards; 10 acres grapes, young vineyard; 6 acres pears; 5 acres plums; cherries and other fruits, upon which they have used several carloads of Freeman's high grade manures. Messrs. Collinson say these Fertilizers have given great satisfaction and they highly recommend them. Grapes cut from Mr. Collinson's young vineyard were as large as plums, and he stated that the bunches were too large to pack advantageously in baskets and had to be cut in three or four parts. By calling upon Mr. William Wiley, the Superintendent of the W. A. Freeman Co. (Ltd.), Hamilton, he will be pleased to point out to fruit growers the orchards upon which Fertilizer was used, the results of which will convince the most sceptical.

Announcement.—At present I am in correspondence with the manufacturers of "Target Brand" Insecticides and Fungicides, and before next issue of THE HORTICULTURIST expect to have arrangements completed for handling these in Canada. Their San Jose Scale Destroyer and Arsenate of Lead preparations are guaranteed to produce results claimed —kill or keep off San Jose Scale, and kill all leaf-eating insects without damage to either tree or foliage Circulars free. W. H. Brand, Jordan Station, Ont.

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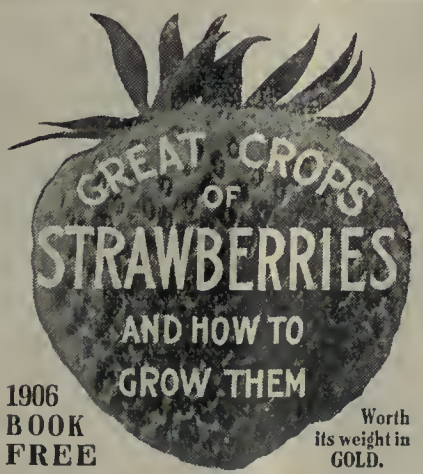

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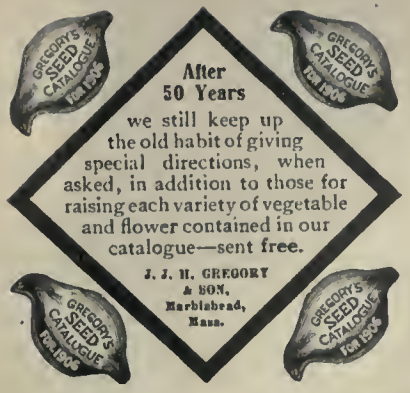

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A Specialty
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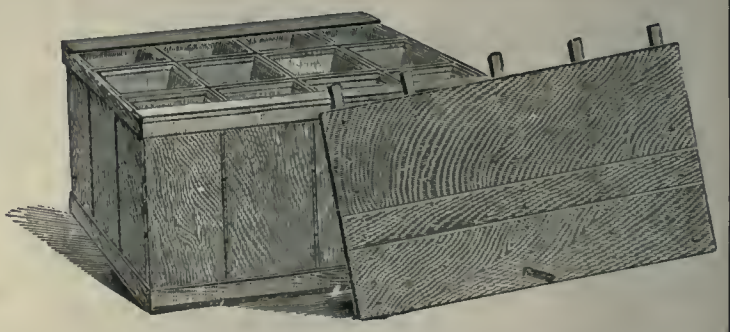

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The best table salt costs no more than the poorest—and can be had for the asking.
Windsor SALT
is sold in practically every grocery store in Canada—and is the best.
Ask for it.

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Gooseberry, Red, White—Currants, Red White, Black—Raspberry, Red, Yellow—Blackberries — Strawberry-Raspberry — Grapevines, Campbell's Early, Eaton, Worden, Moore's Early, Salem, etc, all hardy sorts — Strawberry Plants—House Plants—Roses—Rhubarb and Asparagus Roots—Order early.
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The Canadian Horticulturist

Vol. XXIX APRIL, 1906 No. 4

The Dominion Fruit Conference

THE Dominion Fruit Conference that took place in Ottawa March 20, 21 and 22, was the most important gathering of the kind ever convened in Canada. In spite of the fact that the meetings should have been extended over a week, instead of over only three days, many matters of vital interest to the fruit industry were dealt with, and decisions concerning same reached and recorded. Owing to the short time available for the consideration of the numerous important points raised, it was not possible for those present to draft as carefully as was desirable some of the resolutions that were adopted. In the form in which they were passed, however, together with the discussions that took place concerning them, they will serve to make known the opinions and desires of the most thoroughly representative gathering of fruit growers that, as yet, has been held in the Dominion. Owing to lack of time many important matters that were on the program for discussion were not touched. This was unfortunate, but the disappointment of those present was dispelled, in a large measure, when Hon. Sydney Fisher, Minister of Agriculture for the Dominion, announced that he would arrange for similar gatherings every two or three years in future. This announcement brought out hearty applause.

Put briefly, the most important recommendations passed were the following: That in the Fruit Marks Act a new grade, to be known as "fancy," shall be established, which will include perfect fruit only.

That the act define a number two apple. A definition of a number two was adopted.

That in future the numbers 1, 2 and 3 only shall be used in grading fruit, and that the marking x, xx or xxx shall be discouraged.

That the penalty imposed in the case of third convictions for infractions of the act shall be increased.

That the 28 inch barrel shall be made the standard barrel, and the use of larger barrels be discontinued.

That the standard box used for the export of fruit shall be made the standard box for inter-provincial trade as well.

That the department prepare and distribute widely regular reports on fruit crop conditions throughout Canada, and in the United States and Europe as well; these reports to be issued twice a month during the late summer and fall. Hon. Mr. Fisher expressed his willingness to undertake work of this nature.

That cars of apples for export be iced at the government expense, as is now done in the case of dairy products. Hon. Mr. Fisher promised that this will be done.

That direct sales by growers to retailers be encouraged, and that the government appoint men whose duty it will be to develop markets for fruit in Great Britain and on the continent.

Hon. Sydney Fisher, Minister of Agriculture
Who presided with great ability at the sessions of the Dominion Fruit Conference

That express companies shall be placed under the control of the Railway Commission.

That railway companies be required to give a service with fruit cars of not less than 12 miles an hour; that they be held responsible for damage to fruit when they fail to furnish cars within six days after the cars have been ordered; that they establish icing stations at divisional points; that protection from sun and rain shall be furnished at all stations where fruit is loaded in carload quantities, and that shippers shall be kept informed of the location of cars in transit.

That the Pure Foods Law be enforced in regard to the manufacture of jams and jellies.

That the making of exhibits of Canadian fruit at foreign exhibitions shall be encouraged.

That spraying demonstrations in the various provinces be continued and extended, and

That several improvements shall be made in the shipment of fruit across the Atlantic.

The resolutions committee also brought in a resolution calling for the separation of the fruit from the dairy division of the Dominion Department of Agriculture, but, as described elsewhere, through some clever manipulation on the part of the chairman, Hon. Sydney Fisher, this resolution was not dealt with.

A resolution recommending the provincial governments to enact legislation that will protect growers from being defrauded by commission dealers was adopted.

THE CONFERENCE

The conference was called by Hon. Sydney Fisher, Dominion Minister of Agriculture, as a result of requests made during recent years by the various provincial fruit growers' associations. Growers have long felt the need for the convening of such a gathering, that matters of national importance pertaining to the fruit interests, which could not be discussed satisfactorily at provincial meetings, might be considered and dealt with.

The most noticeable feature of the sessions was the national spirit that manifested itself in the remarks of the various delegates. There was a subdued enthusiasm all through the meetings, and an apparent desire to harmonize the various conflicting interests of the different provinces. Again and again delegates expressed a willingness to give way on minor matters relating to their province or provinces in order that harmonious action might be possible on the part of all the provinces. This assisted in the solution of several

knotty problems, and finally resulted, at the close of the convention, in the spirit of national pride finding a vent in the giving of hearty cheers for Canada and the fruit interests of the Dominion.

THE DELEGATES

While it might have been possible to have had a larger number of delegates in attendance, a gathering more representative of the fruit industry of the Dominion, and of its various subdivisions, could not have been convened. Every province was represented by its full number of delegates, there not being an absentee. The delegates in attendance were:

Ontario—Harold Jones, Maitland; W. H. Bunting, St. Catharines; Elmer Lick, Oshawa; F. G. Stewart, Homer; M. Pettit, Winona; A. W. Peart, Burlington; D. Johnson, Forest; A. E. Sherrington, Walkerton; W. D. A. Ross, Chatham; P. W. Hodgetts, Department of Agriculture; Prof. H. L. Hutt, O. A. C., Guelph; Linus Woolverton, Fruit Experiment Stations, Grimsby.

British Columbia—Jas. A. Grant, Victoria; J. C. Metcalfe, Hammond; W. J. Brandrith, Ladner; Martin Burrell, Grand Forks; R. M. Palmer, Department of Agriculture, Victoria.

Nova Scotia—Ralph Eaton, Kentville; R. W. Starr, Wolfville; G. C. Miller, Middleton; S. C. Parker, Berwick; B. W. Chipman, Department of Agriculture, Halifax; Prof. F. C. Sears, Agricultural College, Truro.

Quebec—G. Renaud, La Trappe; J. M. Fisk, Abbotsford; Robert Brodie, Westmount; R. W. Shepherd, Como (Montreal); N. E. Jack, Chateauguay Basin; J. C. Chapais, Department of Agriculture, St. Denis; Prof. S. Blair, Macdonald College, St. Anne de Bellevue.

New Brunswick—J. C. Gilman, Kingsclear; I. W. Stephenson, Sheffield; Thos. Peters, Department of Agriculture, Fredericton.

Prince Edward Island—Reverend A. E. Burke, Alberton; A. E. Dewar, Charlottetown; J. C. Ready, Department of Agriculture, Charlottetown.

Manitoba—David S. Manson, Winnipeg.

Saskatchewan—R. T. Goodfellow, Prince Albert.

Alberta—A. E. Clendennan, R. J. Hamilton.

In addition to the foregoing, who had been appointed by the various fruit growers' associations, departments of agriculture and agricultural colleges of the different provinces, the various commercial interests were well represented by such leading apple buyers and shippers as Messrs. E. D. Smith, M.P., of Winona, Ont.; R. J. Graham, of Belleville, Ont., and A. S. Chapin, of Toronto. The commission dealers were represented by Mr. G. W. Hunt, of Ottawa and Winnipeg, and by Mr. D. S. Manson, representing the McPherson Produce Co. of Winnipeg. The barrel manufacturers were represented by Mr. J. Innes, of Chatham, and the canning interests by Mr. Robert Anderson, of Montreal. In addition to these parties, several members of Parliament were in attendance at several of the sessions. The presence of all these gentlemen made it possible for the various subjects to be discussed from all sides, and assisted greatly in the intelligent consideration of the various points raised.

Those who may have thought that the fruit interests in the different provinces are too widely divergent to ever be harmonized, had their fears dispelled as a result of the unanimous action taken by the conference on practically every point raised. Not a jarring note occurred. The delegates have scattered to their homes to spread the news that the interests of the fruit growers of the Dominion, from the Atlantic to the Pacific, are identical, and that in future national interests, in every case, must take precedence over those of local importance. The outcome of the future conferences that have been promised will be looked forward to with greater confidence.

OPENING SESSION

The conference was opened Tuesday morning by Mr. J. A. Ruddick, Dominion Dairy Commissioner, who is in charge also of the fruit division. After a few words of welcome, Mr. Ruddick introduced Hon. Sydney Fisher and asked him to preside. In accepting the chair, Mr. Fisher explained that while it might be unusual for the Minister of Agriculture to preside at such gatherings, he felt that the conference was going to be one of national importance, and that the best way he could take of gaining the views of the delegates was to preside at their meetings that he might the more closely follow the various discussions.

The first business taken up was the appointment of committees, which resulted as follows:

Resolutions, Messrs. Martin Burrell, M. Pettit, J. M. Fisk, G. C. Miller, A. E. Dewar.

Program, Messrs. W. H. Bunting, D. S. Manson, R. W. Starr, Rev. Father A. E. Burke, J. C. Metcalfe, and J. C. Gilman.

Credentials, Ralph S. Eaton, Robert Brodie, Harold Jones, W. J. Brandrith, and A. E. Dewar.

FRUIT STATISTICS

The first subject considered was statistics, which was handled most ably by Mr. A. W. Peart, of Burlington, who submitted an exhaustive report containing statistical information relating to almost all branches of the fruit industry in Canada. This report helped to show the delegates the relative importance of the fruit interests in the different provinces. In submitting these figures, only a brief outline of which can be given in this report, Mr. Peart said:

"In these statistics an attempt is made to give some idea of the extent of the fruit industry in Canada and in the various provinces as well. The figures given are derived partly from the Dominion census of 1901, from the Dominion trade returns for 1904-1905, partly from the opinions of practical and well-informed fruit growers in Ontario, and partly from calculations made by myself from the census figures and other data. The need of some such statistics, both from a commercial and an academic standpoint, is apparent. No attempt has been made in these tables to boom the fruit industry. A just and seasonable presentation of the case, based on all the facts available, has been the constant aim. The inherent difficulties of such a task are obvious and while there are undoubtedly errors still, I believe that the figures here submitted are in the main reliable."

The report then went on to show that the year 1901 was a very short apple year, the bearing trees yielding scarcely two bushels each. Last year, 1905, was nearly the same. During the intervening years the crop was heavy, so that it is estimated that the annual average value of the apple crop in Canada during the five years, 1901-1905 inclusive, was $6,984,819, on the basis of 25 cents per bushel, as the apples were picked from the trees.

Total fruit trees of all kinds in Canada, 1901=21,201,239. Adding 10 per cent. for increase since then on the basis of an increase of two per cent. per year (the estimated increase in Ontario), the number for 1905 would be 23,321,362. Total fruit trees in Ontario in 1901, 14,087,936. Add 10 per cent. equals 15,496,729 for 1905.

Total fruit trees in 1901: Quebec, 3,055,805; Nova Scotia, 2,294,780; New Brunswick, 761,834; Prince Edward Island, 360,060; British Columbia, 567,782; Manitoba, 63,637; North-West Territories, 9,405. Average annual value of apple crop these last five years estimated at $6,984,819 (1901 to 1905 inclusive) on the basis of 25 cents per bushel as picked from the trees.

The total apple trees in Ontario in 1901 were placed at 9,541,619 and bushels at 13,631,264; Quebec, 2,256,752 trees and 2,025,113 bushels; Nova Scotia, 1,975,575 trees and 2,065,104 bushels; New Brunswick, 675,364 trees and 503,214 bushels; Prince Edward Island, 202,100 trees and 159,421 bushels; British Columbia, 391,644 trees and 240,012 bushels; Manitoba, 8,332 trees and 571 bushels; North-West Territories, 2,488 trees and 1,487 bushels.

Delegates and others who were in attendance at the Dominion Fruit Conference, as photographed specially for The Canadian Horticulturist

(The names of the delegates are published on page 106, and may be traced by the numbers on their hats. Mounted copies of this photograph may be had for 75 cents each by writing to The Canadian Horticulturist)

Apples exported from Canada during the years previous to June 30, 1904:

Crop Year	Barrels	Total Value
1899.....	956,458	$ 2,578,233
1900.....	678,651	1,482,927
1901.....	516,215	1,566,808
1902.....	1,000,528	2,758,724
1903.....	1,598,614	4,590,793

It was estimated that approximately 815,000 barrels of apples have been exported from Canada since the opening of the apple season of 1905.

Value fruit crop in Canada in 1901 was $8,236,500; number of acres, 370,998; capital value of land and trees, $66,537,650; proportion of capital earning, $44,358,433. Were 25 per cent. added to the value in 1901 to find the value in 1905, the value would be $10,295,625. Add 10 per cent. to the number of acres to find number in 1905, would be 408,097. Were 10 per cent. added to the capital value in 1901 to find capital value in 1905, it would be $73,191,415, and the capital earning $48,794,276.

Other estimates placed the total value of fruit in Ontario in 1901 at $6,004,905, and in 1905 at $7,505,636; the number of acres in fruit in 1901 at 279,571, and in 1905 at 307,528; the capital value in 1901 at $50,347,150, and in 1905 at $55,381,865, the capital earning in 1901 at $33,564,766 and in 1905 at $36,921,242.

Mr. Peart suggested that the Dominion census should be amended as follows: Where it now gives only total acres in orchard it should give acres in apple orchards and acres in other tree fruits. Where it now gives acres in vegetables and small fruits together they should be divided. Where it gives the value of fruit and vegetables together it should give the values separately. In Ontario, where acres in orchard and garden are given together, they should be so divided as to show the acres in apple orchards in other tree fruits and in small fruits.

In conclusion, Mr. Peart submitted the following resolution: "That the delegates to this convention from the several provinces petition their respective governments to collect, classify and publish henceforth in detail in their annual industrial reports the statistics bearing on fruits and (b) that the Dominion Government in the next census give further sub-divisions of the tables and figures relating to fruits; (c) we appreciate and recognize the valuable information given heretofore by the Dominion and various provincial governments on fruit statistics."

In the discussion that followed a delegate from each province was asked to speak in regard to the fruit interests of his province. For Quebec Mr. Jack reported that he was not furnished with statistics for the province, but in his locality during the past five years, there had been an increase of 30 to 40 per cent. in the amount of fruit produced. Mr. Gilman, the delegate from New Brunswick, said that as yet the production of fruit in that province is not equal to the consumption. So little fruit has been grown that reports on fruit conditions have not been made in the annual reports of the department, but this will be remedied in the near future. For Nova Scotia, it was reported by Mr. Starr that the average number of barrels exported during the past three years had been 405,813; about an equal amount was raised for home consumption. Rev. Father Burke, speaking for Prince Edward Island, reported that that province had no machinery for collecting and tabulating reports concerning its production of fruit. The industry has been advancing by leaps and bounds.

The Pacific Province, British Columbia, was heard from through Mr. Burrell, who stated that the fruit industry there is growing with extraordinary rapidity. He agreed with Mr. Peart, as did the other speakers, that each

J. W. Brandrith, Ladner, B.C.
One of the Delegates a d Secretary of the B.C.F.G. Assn.

province should endeavor to publish annual reports showing the amounts of fruit raised, acreage under the different fruits, etc. About 12 years ago, British Columbia shipped its first carload of fruit. Last year the C.P.R. alone handled 4,000 tons by freight. In 1903, there were one million trees, in 1904 there were 1,750,000; in 1905 2,500,000, and this year, it is probable nearly 1,000,000 trees will be planted. He looked forward to the time when, 10 years from now, British Columbia will have assumed first place among the provinces for fruit production. Its possibilities in this direction are only beginning to be realized. As an evidence of what can be done, he stated that 10,000 crates of strawberries were shipped last season from the Kootenay district alone, where a few years ago it was thought to be impossible to raise any strawberries. He spoke of the eight medals that have been won by British Columbia fruit in Great Britain in competition with fruit from the other provinces, and concluded by saying that however much British Columbia growers may brag of their ability to grow fruit, they are one with the growers of the other provinces in their desire to promote the fruit interests of the Dominion as a whole.

Brief reports were presented from Manitoba and Saskatchewan by Messrs. Manson and Goodfellow respectively. Dr. Saunders, of the Dominion Experimental Farm, described the experiments that have been conducted to find varieties of fruit which can be raised in the Northwest, and reported that Mr. Stevenson, of Morden, Man., last year raised 70 barrels of different varieties of fruit, showing that it is possible to raise fruit in that district. While the results at the Experimental Farms have not been very satisfactory, he felt encouraged with the success which has attended their experiments.

FRUIT CROP REPORTS

The first business taken up Tuesday afternoon was the consideration of the gathering of fruit crop reports. The following motion was submitted by Mr. Peart: "Resolved that the Fruit Division be asked

1. To issue monthly reports from May to August inclusive, and semi-monthly from September to December inclusive.

2. That the reports should include weather, general condition of trees, plants, vines, bushes, insects, fungous diseases, outlook or probable quantity of crop and market quotations for each of the provinces.

3. That there be set forth the outlook or probable crop of apples in those

J. M. Fisk, Abbottsford, Que.
A Quebec Representive to the Fruit Conference

countries to which Canada exports such as Great Britain, Germany, France, South Africa, Mexico, and other countries where profitable markets may be secured.

4. That Canadian representatives in the above countries be instructed to cable weekly, at the proper season, the prices ruling for apples and pears in those countries, said cables to be published in a weekly report, and in such newspapers as may be willing to print them.

Mr. Graham, of Belleville, said that the apple dealers spend large sums of money each year to gain information as to the crop conditions throughout the United States and Europe, and claimed that the dealers will be as glad to get these reports as the growers. Mr. Fisher asked what Mr. Peart meant by the words, "the proper season," in clause 4 of the resolution. Mr. Peart replied, that what was desired was that just before making shipments to Germany, he would like to be able to consult a government cable to ascertain if it would be wise to do so.

Mr. Graham was afraid that cable messages would not be as valuable as crop reports, as were a cable to be received saying that the Liverpool market was in a satisfactory condition, it might lead to a lot of fruit being shipped there and the market being glutted. He thought an effort should be made to do away with the auction sales rooms, believing that they are productive of great harm to the Canadian fruit industry. This remark was applauded. Mr. Fisher asked how such reports could be secured in other countries. Mr. Graham suggested that the commercial agents in such centres as Paris and Hamburg should place themselves in touch with the fruit interests and make reports. Mr. E. D. Smith asked if the Department could not appoint paid crop correspondents in those countries.

Mr. Fisher asked if the delegates would like to discuss further the auction sales method of selling fruit in Great Britain. Mr. Graham said that fruit has a standard value, and should not be sold at prices varying from 15 to 20 shillings a barrel. The differences in price are due to large shipments being received one week, glutting the market, while the following week, owing to fewer arrivals, prices are forced up. If British retailers knew they could get all the fruit they wanted in regular quantities, they would be able to contract for it in advance, which would ensure the fruit being sold at more uniform prices, thereby enlarging and steadying the market.

(CONTINUED ON PAGE 99.)

A. W. Peart, Burlington, Ont.
An Ontario Delegate to the Fruit Conference

Pruning the Fruit Trees

R. W. Starr, Wolfville, N.S.

PRUNING should be considered as a system of education for the tree or plant—an effort on the part of man to assist nature in developing the form and shape that we wish, or as near to that as possible, without doing violence to its natural habit. To best accomplish this we must commence with the young tree as it comes from the nursery, either before, or immediately after it is set in the orchard, decide on the height at which to form the head, and prune as near to that as possible. Next, the position of the branches forming the head must be considered. They should spring from a single leader. Never allow two equal branches to struggle for mastery, or there will be trouble in the future. Select such branches as will give a desirable shape and a well-balanced head, cutting off the rest to relieve the root system injured in transplanting, and possibly shortening the side branches if necessary, in order to preserve the balance between roots and foliage during the first year.

As the tree grows older it should be carefully examined each spring and all superfluous branches, like bad habits, be suppressed or removed before they do serious injury. The aim of the pruner should be to keep the branches from crossing and crowding, to keep the tree standing fairly on its feet. If the tree has been carefully and judiciously pruned when young, so as to carry a well-shaped, evenly-balanced head, but little severe pruning will be found necessary in later years, except the annual cutting out of such small limbs as are crowding or crossing, and thus preventing the full development of that perfect form which allows the sunlight to find all portions of the tree.

These may be considered as general principles that may be applied to all orchard trees. It must be borne in mind, however, that it is impossible to make trees follow any set pattern or form; not only has each tree its own individuality but each variety has its own peculiar habit of growth. These habits and peculiarities should be carefully studied, so that pruning may be done to advantage, without doing too much violence to nature.

Old trees that have been neglected will frequently need more severe treatment. Dead and diseased branches must first be cut off, and others that are in the way or too much crowded taken out. Care must be taken, however, not to overdo the thinning. In passing through the country looking at orchards in general, I see more overpruned, or butchered trees, than those in need of severe pruning. This is especially the case in some of the older orchards where a system of cutting from the inside has been used, and a cluster of bare branches is all that remains in the centre of the tree. All the foliage, and the fruit is borne on the ends of those limbs, and frequently they are interlocking with the branches of the adjoining trees, so that the nearest approach to sunlight to be found in such an orchard is by looking skyward from the trunk of the tree. In such case the pruning should be done from the outside. The ends of the branches should be cut back and thinned, and what are usually called "water sprouts" encouraged to start from the large bare limbs. These should be thinned to such as have room to grow and bear fruit. They may need to be pinched back or summer pruned in order to throw them into bearing. This can frequently be accomplished in the third year. In this way the bare centres can be clothed with foliage and eventually with fruit.

Extra care must be taken to preserve all the fruit spurs possible. Many varieties form fruit spurs on large limbs and continue bearing for several years. These in time become brittle and are easily broken, but are seldom replaced. Pickers and pruners are apt to be careless and thoughtless. They must be taught to have more respect for those little spurs, and, instead of destroying them, try to induce the growth of more. This may not seem to come within the purview of pruning as a subject, but it is of too much importance to be lost sight of.

In cutting branches from trees there is usually only one place where it can be advantageously done; that is as close to the trunk or main branch as possible, without making the wound larger than necessary. By this method the wounds heal over most quickly, and the trees are least disfigured. This rule holds good for limbs of all sizes.

All pruning tools must be in good order and perfectly sharp; otherwise the work cannot be neatly done, and the wounds will not heal readily. All wounds over one inch in diameter should be painted immediately. Many years' experience has shown that nothing is better for the purpose than pure white lead and linseed oil.

In this branch of horticulture there can be few fast rules. Every tree is a study by itself, and every man must work according to his conditions, and the amount of brain power he can afford to devote to each special case, for he will find no two specimens exactly alike.

J. C. Metcalfe, Port Hammond, B.C.
One of the Delegates from the Pacific Province

Planting Orchard Trees

AS the Canadian fruit industry develops, orchardists are paying more attention to planting and to the distances apart for trees and bushes of the various fruits that will bring best returns. The general tendency with all fruits is to wider planting, so that cultivation, spraying, pruning and other cardinal orchard operations may be carried on more easily and to better effect. In this way only can the high quality of fruit now in demand be produced. Fillers are being commonly used by leading growers.

In a letter to THE HORTICULTURIST, recently, Mr. W. H. Bunting, of St. Catharines, wrote:

"Apple trees should be set not less than 40 feet each way for permanent trees. If fillers are used, 40 by 50 feet would be more profitable. Early varieties, such as Duchess, Yellow Transparent, Wealthy, Ontario and others, could be used as fillers between the wider distances. I prefer the well-known and tried winter varieties, suitable for the export market, to any other for profit. A practice that is being advocated by many is to set an orchard with Talman Sweet or some such hardy free-growing stock, and later, top-graft to the varieties desired.

"Growers have been planting peaches too close. Peach trees should be given

not less than 20 feet each way, and 20 by 24 would be better. The same applies to cherries and plums. Pears may be set closer.

"I would emphasize the necessity of a thorough preparation of the soil before planting. It is hardly possible to give too much attention to this essential. A reasonable trimming of the roots and low heading are now the slogans, on account of the great necessity of thorough and careful spraying, and the greater ease in gathering fruits of all kinds. The tops should be cut back severely and the tree started as near the ground as possible, not more than two feet. With modern labor-saving machinery it is possible to cultivate a low-headed orchard much more easily than formerly."

In discussing essential points in planting fruit orchards, Mr. Joseph Tweddle, of Fruitland, says: "Having selected site and soil suitable, the next in order is the preparation of the soil. Contrary to general expert advice and practice, we have found it profitable to plant on fresh plowed sod land instead of soil which previously has been cultivated to destroy all grass. True, it does require more work to prepare and put in good tilth and dig the holes and plant the trees or vines, and more thorough cultivation the first season to kill the grass or sod, but think of the advantages to be gained from the decaying humus in the soil holding the soil moisture from the spring rains during summer. It also affords winter protection to the roots for the first and second winters following planting. The little extra labor is many times repaid. This method applies only to trees and grape vines where the necessary work of hoeing is but trifling and not to small fruits, where the grass might cause endless trouble. Humus is just as requisite in the young orchard and vineyard as anywhere else on the farm, and will push the trees and vines into a vigorous and healthy start in life if properly handled. Most growers delay planting because their land is in sod. By working it for a year or two they destroy this humus-producing element.

"With increasing wealth comes an ever growing demand for higher quality, and this applies in planting as to distance apart. The close planting is gradually giving way to more liberal space so necessary to the perfect development of fancy fruit and the consequent high prices to be obtained. Without an abundance of light and air for the foliage and the soil no tree can produce high quality of fruit. Peach orchards 12 by 12 feet are being replaced by others 20 by 20 feet, and even more by some of the leading growers. Wider planting is being practised, too, with other fruits.

"Fillers are not so much used as formerly, growers preferring to grow some hoe crop at a safe distance from the trees till the trees require the whole space. Few growers have the courage to cut out the fillers in time and by crowding the permanent trees they cause them to grow tall. This is disastrously expensive in pruning, spraying and picking later on. If fillers are planted they must be of heavy bearing, short lived varieties, suitable to the soil and climate of the locality. Selection must be left largely to the wisdom of the grower. In sections where Wagener and Ontario thrive they can be used for fillers. In pears, dwarfs can be used between standards or possibly currants, gooseberries or raspberries can be planted in the rows of trees. Peaches grow so rapidly that it is scarcely profitable to plant fruit as fillers. In some cases raspberries and strawberries are used.

"Planting should be done as early as the soil can be prepared in the spring. Trees should be dug early and well heeled in. It is best to open the bunches and stand the trees in a large furrow, covering the roots so that no air can reach them. Many trees are ruined by careless heeling in. If planting is delayed into warm weather the young rootlets start and the trees can scarcely be got to the field and planted without destroying them, or at least causing a great check to the growth of the tree. We must emphasize early planting for good growth the first season. In case of unavoidable late planting, keep the trees wrapped in a damp cloth if necessary. In dry soil use half a pail of water to a tree when the hole is filled within four inches of the surface, then fill in the balance with fine dry soil, mulch with coarse manure and keep the cultivator going."

Mr. J. C. Harris, of Ingersoll, wrote THE HORTICULTURIST as follows: "I would suggest to intending planters that they set a number of trees in one corner of the orchard at close distances—say 12 feet apart—or between the standard trees. These can be used any time before they are 12 years old to replace standards that have died or are not doing well. In this way a thrifty orchard of even size can be secured.

"During the past two years I have moved over 100 trees 11 years old and there is little difference between them and the others planted the same year.

"I prefer spring planting as soon as the ground is fit for cultivation. Standard varieties should be set at least 35 or 40 feet apart. Where fillers are used, Wealthy, Wagener and Ontario are the most desirable in this section. The directions and instructions for planting by nurserymen are usually satisfactory and can be followed with safety."

The Currant Patch

W. E. A. Peer, Freeman

A FEW years ago currants were receiving little or no attention on the part of the commercial fruit grower. The price realized was so small that only under favorable conditions and convenience to market was it possible to receive sufficient returns to pay for the cost of handling and marketing this crop. Such a state of affairs discouraged the planting of currants, and led to the destruction of many plantations in existence. This check in the development of the currant industry and the increasing demand for this fruit has once more placed it among the desirable crops to have included in the fruit plantation.

The selecting of varieties of currants for planting is a very important consideration, and one that if carefully attended to will give ample returns in cash and satisfaction for the trouble taken. From a commercial standpoint appearance has a great deal to do with the final returns. Size plays an important part in establishing the price. There is frequently a difference of two cents a quart in the price paid for large-sized currants in preference to small ones. I have known buyers refuse to handle the product supplied by growers whose plantations were known to contain a large percentage of the smaller varieties of currants.

Among the varieties that might be mentioned as undesirable on account of their small size are Brayley's Seedling,

S. C. Parker, Berwick, N.S.
One of the Delegates from the Land of Evangeline

New Victoria, Raby Castle, Red Dutch and Versailles. Among the better class of currants it would be difficult to select a limited number of varieties to recommend under all circumstances. If the reports of the experiment stations are studied and the opinions of other growers considered, a diversity of opinion in regard to this vexed question will be noted. The man who is making currant growing a business will find it to his advantage to investigate closely for himself those varieties recommended by experiment stations and make his own selection of those best suited to his conditions.

The soil for currants should be thoroughly prepared before the plants are set out. It must be rich and deeply tilled in order to give the best results. Currants are a shallow-rooted plant, spreading out their rootlets near the surface, hence deep cultivation cannot be given after the plants have become established without doing severe injury to the bushes. For best results they require a rich, damp, but not wet, soil, preferably a sandy or gravelly loam. When setting out the bushes give them plenty of room. There is some variation of size of bush in the different varieties, but generally speaking, six feet each way is close enough. Care should be taken to get the plants set deeply enough; a good guide is to plant them somewhat deeper than they were in the nursery row.

Before planting the roots should be made in proper condition for setting out. When digging the plants many of the roots become broken and torn. These should be pruned back, leaving a clean, oblique undercut which will fit closely to the soil, and from which new rootlets will more readily spring than they would from the bruised and mutilated ends as they come from the nursery.

Currants will adapt themselves to a great amount of neglect, but for large currants and productive bushes, the plantation must receive proper attention. They will respond liberally to careful cultivation and enriching of the soil. Owing to the shallow-rooted system of the currant, cultivations must be frequent and shallow to conserve moisture, keep down weeds and avoid injury to the roots. Stable manure is one of the best fertilizers that can be used in a currant patch, as it also serves as a mulch. If necessary, it may be supplemented with a small amount of bone dust and potash fertilizer.

To get the best results it is necessary to prune annually and systematically. There must be a gradual removal of old wood, and a constant supply of new wood developed to take its place. Keep the branches as well distributed as possible, and the bush symmetrical. Do not allow branches to become long and straggly, or they are apt to bend over and break at the time of maturing the fruit, so that it is soiled in the dirt and made unfit for market. Under branches that have a tendency to sweep the soil should be removed. The fruit on these is almost sure to be splashed with soil when a heavy rain-storm comes.

Rev. Father A. E. Burke, Alberton, P.E.I.
One of the Delegates from the Garden of the Gulf

Raspberry Culture as Practised at the Lake Huron Station

A. E. Sherrington, Walkerton

RED raspberries are grown in rows six feet apart, the land is first put into good condition by either plowing in clover or barnyard manure the fall previous to planting. As all planting is done in the spring, the land should be plowed deep as soon as fit to work, then well worked with disk or cultivator, so as to have a fine surface. The rows are made by plowing a deep furrow, throwing the soil out both ways; the plants are then set in the bottom of the furrow, putting in sufficient soil to cover the roots well. The furrow is gradually filled by the process of cultivation. Frequent and shallow cultivation is practised so as to control the soil moisture and destroy all weeds.

As the red raspberry propagates by suckers, the rows are allowed to fill with plants and spread to about 30 inches. The rest of the space is kept clean by frequent cultivation. Plowing or deep cultivation should never be practised in a raspberry plantation. For fertilizers, barnyard manure and wood ashes are used. Some growers are using commercial fertilizers alone so as to avoid weed seeds, but under this system the land will soon become deficient in humus, which is such an important factor in the production of plant growth. The soil, when depleted of its humus, dries out much more readily than when well supplied with humus or vegetable matter.

After testing some 70 varieties for the last eight years, the following varieties has proven to be the best all-round sorts for either market or home use: Marlboro—plant of dwarf habit, strong and hardy, fruit large, firm, rather dry and seedy for a good table berry; color, bright red; quality fair, ripe July 13. Herbert—a new berry of recent introduction plant a good grower, hardy, fruit large, firm, but not nearly so dry as Marlboro; color, bright red; quality good, ripe July 17, very promising. Cuthbert—the Queen of all berries, plant strong and very vigorous, hardy, fruit large and firm, dark red, quality of the best, ripe July 19. Phœnix—plant strong, vigorous and hardy, fruit medium to large, color, dark red; quality good, ripe July 22, a good cropper. These four varieties are given in order of ripening, and will cover the raspberry season.

BLACK CAPS

The blackcaps are grown in rows six feet apart and three feet in the rows. As they propagate from tips, they do not spread as the reds do. It is very important that they should be planted in a deep furrow; if not set deeply they are liable to be blown out by the winds Cultivation is the same as for the reds. The pruning is done by pinching off an inch or two of the terminal points of the young canes the first year, when about 18 inches high. This will cause them to grow stalky, and establish a good root system. The laterals should be cut off the next spring to about 10 or 12 inches. The second year the canes may be allowed to grow to 24 or 30 inches before pinching back. By this method strong canes will be formed with the laterals near the ground. The laterals at this pruning can be left about 24 inches long; they should be cut back in early spring. This treatment will produce a strong upright bush that will need no tying. It is also a system of thinning, which is necessary if first-class fruit is wanted.

The two best varieties are: Conrath—plant strong and vigorous, fairly hardy, fruit large, quality good, and Hilborn—plant vigorous and very hardy, fruit large and of good quality.

How a City May be Made Attractive

THE need for improving the existing conditions in and around cities and large towns was depicted clearly and with force by Mr. J. Horace McFarland of Harrisburg, Pa., who spoke in St. George's Hall, Toronto, on March 20, under the auspices of the Toronto Horticultural Society. That much can be done in a short time to improve these conditions was proved by the success that has attended the efforts of Mr. McFarland and his co-workers in Harrisburg. Excellent views were thrown on canvas to illustrate unsightly spectacles commonly found as a city is approached. Among these were such public nuisances as the repulsive signboards, the odoriferous dump heaps and the death-dealing sewage systems.

An Unsightly Dump at Harrisburg, Pa., Before Improvement

The executive of the Toronto Society are to be congratulated on securing the services of such an authority on civic improvement as is Mr. McFarland. Great things are promised by the society in the way of improvements in Toronto's streets, parks, etc., and it can only be expected that Mr. McFarland's address will stimulate that body to still greater work than had been proposed. President Frankland introduced the speaker of the evening as the president of the American Civic Improvement Association.

Before dealing with civic improvement proper, Mr. McFarland discussed the Niagara Falls problem, and advised the citizens of Canada to put forth every possible effort to prevent that great scenic wonder from being destroyed to fill the pockets of 1,000 stockholders representing six development companies. Those financially interested claimed that by using this power to develop electricity, a great public benefit would result. It was shown, however, that in Buffalo light was more costly than in Harrisburg, where no such means of developing power is at hand. Views were presented showing the beauties of the falls and the rapids at present, and others showing what a hideous sight will replace them if these companies are allowed to carry on operations at their own free wills.

"The people," said Mr. McFarland, "have the power to run the country's affairs, and they should set to work to save the falls. Every year finds an expenditure of $15,000,000 by those who visit this greatest scenic wonder of the world.

"Citizens of Ontario also benefit from the visits of these sight-seers who spend considerable money. When the waters of Niagara are harnessed, all this is lost. People lose sight of the fact that this is a sight that American citizens should be proud of, because they think it may result in a paltry gain. Pressure should be brought to bear on those in authority. Letters should be sent to your premier, and to the members of your parliament urging that steps be taken to prevent these development companies from destroying such a magnificent production of nature."

The methods adopted in forwarding civic improvement in Harrisburg were outlined. In 1902, $5,000 were subscribed by 60 citizens to be devoted to formulating a scheme for general improvements. Three men were selected, one of whom was given charge of water and sewage systems, another control of paving, and the third charge of parks, drives, etc. These three men drafted a plan of the various steps that should be taken to make Harrisburg what it should be. The report recommended the expenditure of $1,090,000.

The people had to be convinced that the benefits that would result warranted the use of so much public money. The $5,000 that had been subscribed were spent in educating the people to the need of this. A copy of the report containing the suggested improvements was sent to every citizen; clergymen and principals of schools co-operated; every organization in the city was approached, and the newspapers gave valuable assistance. Women workers formed committees and sent representatives to the schools to talk to the children and distribute pamphlets. In this way many parents were won through the children. Everything possible was done to have the people vote intelligently.

It was pointed out to the voters that if this scheme was carried out it would mean an increase in the tax rate of about three and a half mills under the most unfavorable conditions, but if everything prospered as they hoped it would, the increase would not be over two mills. In return for this expenditure they offered beautiful parks and streets, and, more important from the standpoint of economy, a pure water supply and a perfect sewage system. In this connection views were used to show the condition of the streets, the extent of the garbage dumps, and the prevalence of large signboards hiding natural scenery that should be open to the view of wayfarers and travellers. Statistics were given showing the ravages of typhoid fever and other diseases due to using impure water and to an inadequate sewage system. Unfiltered water from the Susquehanna River was being used throughout the city. This water had received the sewage from cities and towns farther up the river, with a total population of over 522,000. At certain seasons the waters of the river lowered

and stones, etc., along the banks remained covered with a foul, unwholesome and death-dealing slime.

The people gradually became awakened. The day previous to the election large streamers were used on the street cars, urging the citizens to vote for pure water, better sewage system, less diseases, playgrounds, parks, beautiful streets, etc. No attention was paid to politics. Those men who had the welfare of the city at heart were elected and the entire project was a huge success.

The results have been greater than was anticipated. In four years a filter system has been installed by means of which pure water is supplied. Already 21 miles of streets have been paved and are kept perfectly clean. At first the citizens on various streets rushed to the city buildings to ask that their streets be left out. All this is changed. More paving is to be done this spring and the residents rush to ask that some of the work be done on their streets. Slum streets have been converted into veritable gardens. The railroad station surroundings have been improved so that the new comer is at once convinced that Harrisburg is a lovely city. Mr. McFarland pointed out that Toronto Station could easily be made a place of beauty. Commerce was important, but to some extent should be subordinate to beauty.

A notable change has taken place where the old dump shown in the accompanying illustration was in evidence with its conglomeration of tin cans and garbage as well as its horrible odors. This has been converted into a beautiful river front one and a quarter miles long. Recently 3,800 feet have been added, and this, too, will be made into park ground. Grass now replaced the garbage, and shrubs the tin cans.

A formal city entrance, shown in the third illustration, also has been constructed. Two stately pillars were obtained from the old state capitol. On the bases of these pillars are inscriptions of historic importance. The surroundings have been improved in keeping with the importance of such an entrance.

Everything has been done quickly and systematically until the city is surrounded by playgrounds and park grounds accessible from every point.

The practice of butchering shade trees was strongly condemned, as was also the erection of signboards and public dumps, which showed the lack of necessary attention by the citizens to public duties. Slides were used to impress the evils of these practices. Telephone and telegraph companies were charged with undue destruction of trees in many cities and frequently in the country as well. City councils were advised to force these companies to place the wires underground. In some

The Unsightly Dump Transformed into a River Front Park

parts of the United States this method had been tried and it was being adopted altogether as the most economical. City governments were advised to allow none but experts to prune the shade trees. Mr. McFarland said that the time was not far distant when the ruthless cutting of trees would be prevented by law. The management of trees should be in the hands of a competent person who could fight fungous and insect pests, and otherwise look after the best interests of these shade-producing, health-giving forms of plant life.

Views were shown of streets with trees trimmed in telegraph pole fashion, and contrasted with streets lined with shapely trees. Streets with poles on which were hundreds of wires were compared with streets where all wires were underground. It was mentioned that the easiest way to make he streets of any city 10 feet wider without widening the street was to remove the telegraph and telephone poles. Just as soon as the citizens said it must be done, and cut down the poles, the companies would find that it was possible, and would learn that it was in their own best interests.

In illustrating and describing the signboard nuisances, the utter disregard of private rights in Boston and other cities was shown. Such nuisances to the eye should be as strongly objected to as foul odors or loud noises.

Garden plots for school children were mentioned as worthy f atures of any school management. The dandelion and apple blossom children were much superior to those brought up in the gutter. Each city should provide something better than dirty lanes and dreary school yards for the children. Parks were cheaper than policemen. If the children were to be allowed to become wild and reckless parks should not be sustained. In the winter the same parks could be used for curling and tobogganing.

Mr. McFarland referred to the annual pilgrimage to Paris and to Rome to see the beauties of those cities. American cities could be made as great centres of attraction if the citizens submitted to spending money that would return tenfold because of the increased number of visitors. Besides there was the satisfaction of living in a beautiful city. In Harrisburg the housing problem, as well as walks, lawns, flowers, trees, etc., was being given thoughtful attention. Each city must be beautified in its own way. No two cities could be treated similarly. Nature unadorned proved to be most attractive. Harrisburg in four years had done great work. Toronto or any other city could do as well or better if an earnest effort were made. The taxes had made no appreciable increase. In 1902 the rate for city purposes was 7½ mills, whereas in 1906 it was but 8 mills. Citizens had been assured that the increase would not be over three and a half mills; instead it had increased only one-half mill. In return for this extra levy they had pure water and hence less disease; they had an excellent sewage system, beautiful streets, beautiful parks, and a general change for the better in and around the city. Mr. McFarland closed by saying he was proud of the development in his city, and hoped that the success following efforts put forth there would stimulate other cities and towns to do likewise.

The president of the society, Mr. Frankland, urged Toronto citizens to

Formal City Entrance at Harrisburg, Pa., as Improved by the American Civic Association—to be Dedicated April 20

begin earnest work along the lines referred to by Mr. McFarland. For the present he said the society would labor with work it knew could be accomplished. He asked the co-operation of the citizens.

A vote of thanks to Mr. McFarland was moved by Mr. R. J. Score, a director of the society, and seconded by Park Commissioner Chambers, who pointed out the excellent natural facilities that were afforded in and around Toronto for successful civic improvement work.

A List and Description of Leading Perennials

Roderick Cameron, Niagara Falls South

HAVING received a number of letters from readers of THE HORTICULTURIST enquiring about the most desirable perennials for all purposes, with the season of blooming, color and duration of bloom and height of the plants, I submit the following list for publication, that readers of THE HORTICULTURIST may have a catalogue from which to select with some degree of intelligence. By the time the April issue appears it will be time to procure the desired specimens.

Arabis alpina, Rock or Wall Cress, single white flowers, grand for the edge of a bed or border, also for the rockery. Grows to six inches high, spreading.

Arabis alpina flore pleno, double white flowers, and begins to bloom after the single one is done, therefore plant time about with the single one to prolong the season of bloom, May and June.

Lychnis plenissima semper florens, rose flowered, double, in bloom all summer, grows 18 inches high.

Lychnis viscaria splendens pleno, Lamp Flower, double, red. Grows a foot high, blooms continually for six weeks.

Tunica saxifraga, a pretty and useful plant producing light pink flowers all summer, which resemble a small campanula, grows six inches high, good for the edge of the border and the rockery.

Gypsophila paniculata, Baby's Breath, in bloom during July and August, height 18 inches, flowers white—in panicles.

Spiræa aruncus, Goat's Beard, in bloom June and July, flowers creamy white, three feet high.

Spiræa Chinensis, light pink flowers, very pretty, three feet high, bloom in July.

Spiræa palmata, bright pink, flowers during July, two and a half to three feet high.

Spiræa palmata alba, a pure white variety of the preceding, otherwise the same.

Saxifrage umbrosa, London Pride, pink, flowers during June and July, 18 inches high.

Lythrum salicarium, Spiked Loosestrife, purplish flowers, grows four feet high, in bloom July and August.

Clematis Davidiana, in bloom August and September, grows three feet high, flowers light purple.

Clematis recta, in bloom June 26 to July 15, flowers white like paniculata, height four feet.

Anemone Japonica, Wind Flower, bright pink, and height two feet, in bloom from August to late fall.

Anemone Japonica alba, a pure white one of the preceding, but six inches taller, in bloom the same time.

Anemone, variety Queen Charlotte, claret-colored flowers, otherwise like the last, blooms the same time.

Anemone, variety Whirlwind, semi-double white flowers. This is the best variety, blooms at the same time as the others.

Peonies can be got in a hundred different varieties, and in as many colors,

three feet high, blooming in June and July.

The Tree Peony also can be procured in a number of varieties. I prefer the variety Moutan, light salmon in color, grows four feet high, woody or shrubby. blooms during June, tenderer than the herbaceous varieties.

Bocconia cordata, Chinese Salendine, grows six feet, flowers creamy white on long terminal spikes, from July to September.

Papaver orientalis, scarlet, large flower, nine inches in diameter, three to four feet high, in bloom June and July.

Papaver nudicaule, blooms all season, should be planted time about with the oriental to keep up a display during the season, two to two and a half feet high, color from creamy white to bright yellow.

Dicentra eximia, purple flowers all summer, a foot to 15 inches high.

Alyssum saxatile compactum, yellow flowers, 18 inches high, blooms in May and June.

Boltonia latisquama, aster-like flowers, light pink, in bloom during September and October, height four to five feet.

Stokesia cyanea, Stoke's Aster, large purple flowers, much like asters during August and September, 18 inches high, a good plant when climate and soil suits it.

Inula ensifolia, Sword-Leaved Elecampane, grows six inches high, flowers yellow like a small sunflower during July to frost.

Coreopsis lanceolata grandiflora, Tick Seed, grows two to three feet, yellow flowers, large, from July to fall if the seeds are kept off.

Coreopsis senifolia, grows three to four feet, flowers yellow, small, sweet scented, during August and September.

Helianthus multiflorus flore pleno, Double Flowered Sunflower, grows four feet, in bloom from the end of July to late fall, yellow.

Helianthus sparsifolia, grows four to six feet, and is the best of the single flowered varieties, August and September.

Campanula persicifolia gigantea Moerheimi, blooms large double white, during July and August, two feet and one of the very best perennials grown.

Campanula lactiflora, milk flowered, grows two to three feet, blooms during end of June to August, also one of the best perennials.

Platycodon grandiflora, in blue and white colored blooms, grows to three feet, in flower during July and August. This is also a grand plant of the campanula family.

Statice latifolia, Sea Lavender, a grand plant to grow, in bloom from July to frost, flowers purplish, heath like, good to dry for winter bouquets.

Veronica spicata, purple flowers, all summer and fall, grows two to three feet high.

Veronica spicata rosea, the same as the last but rose flowered.

Lysimachia clethroides, white terminal spikes, from June to August, three feet high.

Cephalaria Tartarica, grows four to eight feet, flowers during July and August, straw color, resembling a scabiosa.

Rudbeckia triloba, also called Californica, in bloom August and September, flowers dark yellow, four feet high.

Rudbeckia purpurea, purple flowered, in July and August to September, grows three feet high.

Rudbeckia laciniata flore pleno, Golden Glow, grows six to eight feet, double yellow flowers in profusion from July to September.

Achillea ptarmica, The Pearl, produces double white daisy-like flowers in abundance during July to frost, grows two to three feet high.

Achillea tomentosa, produces single yellow flowers, grows six inches high, a good edging plant, in bloom now and again all summer.

Pyrethrum maximum superbum, one of the best of the Ox Eye Daisies, grows three feet, large white flowers with yellow centres, in bloom from June to frost.

Pyrethrum uliginosum, Great Ox Eye Daisy, grows five feet high, making a grand display of white flowers from the end of August to the middle of October.

Delphinium cashmerianum, and D. grandiflorum, the former dark blue, single, the other dark blue, double, flowering in July. After they are done blooming if they are cut back they bloom the second time in September; height anywhere from three to six feet.

Liatris pycnostachya, Blazing Star, grows four feet, purple flowers, in August and September.

Helenium autumnale grandicephalum, Great Sneezewort, grows six feet high, flowers single, yellow, like an Ox Eye Daisy, blooms in abundance during August and September.

Helenium grandicephalum striatum, flowers striped with brown, otherwise like the last, blooming at the same time.

Chelone Lyoni, Red Turtlehead, grows four feet, in bloom August and September.

Chelone obliqua alba, White Turtlehead, blooms in August and September.

Pentstemon barbatus Torreyi, Scarlet Beard Tongue, bloom scarlet, from the middle of June to fall, grows three feet high.

Pentstemon ovatus, a white variety of the preceding, height three feet, in bloom June and July.

Physostegia Virginiana, False Dragon Head, a native plant of Ontario, none better under good cultivation, grows four feet, flowers bright pink, in bloom August and September.

Monarda didyma, Scarlet Bergamot, and Monarda purpurea, Purple Bergamot, both very good and useful perennials, growing three feet, in bloom July and August.

Mertensia Virginica, Virginian Cowslip, a great favorite, blooming through May and the first of June, 18 inches high, blue flowers.

Phlox, can be got in 100 varieties, any shade of color desired.

Asclepias tuberosa, Pleurisy Root, grows two feet, flowers orange yellow during August and September.

Alstroemeria Simsii, Chilian Lily. Where this plant thrives there is nothing prettier, flowers lily like, yellow with dark veining, in bloom during July and August, height two to three feet.

Tritonia, formerly called Montbretia, can be procured in a half-dozen varieties yellowish flowers, resembling small gladioli, grows two to three feet, bloom in August and September.

Gladiolus communis. This is the type, or wild one; it is quite hardy, and should be grown by all lovers of flowers, blooms much smaller than the present-day hybrids, in bloom in June, flowers reddish purple.

Iris can be procured in a hundred varieties, but I prefer the Japanese and German varieties, Germans in bloom in June, Japanese in bloom in July, all shades.

I would highly recommend the violas or tufted pansies to be grown more extensively. They are nearly as large as the common pansies, and sweet scented like the violet, and in self colors. They can be secured in many named varieties. and bloom more freely than the pansy, Make the bed half leaf mould and the other half sandy loam with a good sprinkling of sharp sand, mix well, and sow the seeds thinly where they are to bloom in the spring.

Every person wants to grow a few liliums. My choice in variety is Lilium candidum, Lilium Isabellinum, Lilium speciosum, var. alba, var. rubra are good. To grow them successfully they must be planted at the foot of a north sloping bank, shaded on the south side with trees, plant about one foot deep, never let the frost get at the bulbs, rather cover them with boards, tin or any material to turn the water from them in winter. Give the lily bed one or two inches of a mulch of leaf mould.

Taking everything into consideration I am well satisfied with the steam spraying outfit used in my orchard. It is rather heavy, but with a good team of horses and wide tires does not cause much trouble. Compressed air outfits have to be loaded too often, and gasoline are a little uncertain. I prefer the steam, but the gasoline may be so improved they will ultimately prove the best. (D. J. MacKinnon, Grimsby, Ont.

Begonias and Their Culture

M. B. Templin, Calla, Ohio

BEGONIAS derive their name from a noted French patron of science, Michael Bégon, who lived between 1638 and 1710. They were first introduced into England in 1777. Are indigenous to Asia, South Africa, Mexico, Central America and South America. There are hundreds of species known, of which about 150 have proved to be of value. In recent years there has been a great improvement in many plants, but few have been improved so rapidly as the begonia. Many hundred varieties are known and are in cultivation, but the number worthy of general cultivation and dissemination does not exceed a few dozen. For horticultural purposes begonias are usually divided into three general classes: (1) Fibrous-rooted, or winter blooming; (2) Tuberous-rooted, or summer blooming; (3) Rex, or ornamental leaved.

Begonia Templinii

FIBROUS-ROOTED

The first class embraces the flowering begonias, so-called in florists' catalogs. The variety, brilliancy and beauty of their foliage, and their remarkable free-flowering quality during the winter, combine to make them one of the most desirable and most popular plants. As pot plants for the window, garden and conservatory they have few equals. While they are exacting in their requirements, these requirements are simple and easily supplied. They respond very readily to intelligent treatment. Most varieties are rapid growers, a few months'—or at most a year's—growth will produce beautiful specimens from cuttings. They are among the most satisfactory plants for the living room.

Among the most popular varieties that appear in florists' catalogs and in local greenhouses, are the following: Alba perfecta, Argentea guttata, Diadem, Metallica rubra, Sandersonii, Thurstonii, Vernon, etc., with new varieties of merit being added from year to year. One of the most valuable of the recent introductions is Begonia Templinii. By all who have seen it it is acknowledged to be the most beautiful. It is positively new and distinct in its class. The accompanying illustration, made from a photograph, gives a fairly accurate idea of the characteristics of the plant. It is an upright, vigorous grower; leaves varying in length from six to ten inches, with wavy margins; glossy, metallic green, profusely and irregularly blotched and variegated with various shades from creamy white to golden yellow, beautifully tinged and flushed with flesh-pink, deepening towards the edges to the richest crimson; under side bright coppery crimson. It possesses the most remarkable combination and blending of colors ever found in a begonia or any other plant. The flowers are a beautiful pink. As a bedder, when exposed to partial sun, it is wonderfully effective.

Gloire de Lorraine is a grand and wonderfully profuse bloomer that is being illustrated and described in glowing terms in magazines and trade papers. Unfortunately, however, it does not give satisfaction under ordinary house culture, being especially adapted for forcing in greenhouses and conservatories.

Flowering begonias, as a class, are of very easy culture. A soil compost consisting of three of good loam to one of thoroughly rotted manure and one of sand, will produce excellent results in growth and flowers. Cuttings taken from a healthy growth will root readily in sand, if given bottom heat. With reasonable treatment as to light, moisture, fresh air, and repotting when needed, they soon become fine plants.

TUBEROUS-ROOTED

The second class, tuberous begonias, were introduced about 35 years ago from the South American Andes. When first grown in the United States it was thought they would be a fitting companion for the geranium, but this was an error, as they would not withstand the dry atmosphere and hot sunshine. They require partial shade to come to perfection. During the past few years the improvement in size, texture and coloring of leaves, and the size and colors of the flowers, has been phenomenal. The flowers are of enormous size, often five to six inches in diameter; the petals are thick and wax-like, and often creased and wrinkled most beautifully. In addition to the beauty of the flowers the foliage has been so improved that it is difficult to find two plants alike as to foliage. They bloom very freely all summer. They may be propagated from seed, but the most satisfactory way is to buy tubers from some reliable florist.

Their culture is very simple, and they are exceptionally fine either for pot plants or for bedding, being easily raised and requiring but little care. The soil should be composed of rich loam, leaf mould and sand, and should be kept moist, but not wet, and always well drained. They succeed best in a partially shaded situation well protected from strong winds. Tubers can be procured in both single and double varieties, in shades of rose, red, yellow, and pure white. Start tubers from February to April.

REX BEGONIAS

Rex begonias are grown expressly for the beauty of their foliage. The original type, introduced from Asam, India, was first illustrated in Flore des Seres, published in Ghent, Netherlands, about 1857. From this type, by crossing with a few other species, and then from hybrid seedlings from their progeny, they have been so improved as, in some instances, almost to have lost resemblance to the original, except as to habit of growth.

In no other class of plants are the rich metallic shades and various colors so satisfactorily blended, while the size, color, and form of the leaves are of the greatest variety. Some show bright green, pure silver, bronze and velvety green; others have a distinct zone of bright, rosy-plum color; and others a

Rex Begonia

zone of light, dull red. As pot plants they have few equals, though their flowers are small and inconspicuous. They are propagated from either whole or segment-leaf cuttings, but do not root readily for the amateur.

The culture of the Rex is simple. Soil should be similar to that for other begonias. They require a moist, but not wet, rather warm, shady situation, protected as much as possible from strong winds. I know of no other plant that affords more pleasure and satisfaction when grown as a pot plant under favorable conditions.

Begonias, generally speaking, are injured by too much sunshine during the summer; they are benefited by all the sunshine they can get during the winter and spring months. Their culture is simple and they are seldom attacked by insects. With fair treatment, they will always prove satisfactory.

What Can be Grown on a Small City Lot

Dr. Douglas G. Storms, Hamilton, Ont.

MY lot on which the numerous varieties of plants and flowers are grown is 91½ feet deep with 45½ feet front facing the west. In the north-west corner 31½ by 25½ feet is taken up by the house. This leaves a block in the rear 46 by 45½ feet, and a strip along the south side of the house 25½ by 14 feet. The lot is shut in on the east by a large building, presenting a blank wall the whole width of the lot. This wall I have covered almost completely with Ampelopsis Veitchii. A bed runs the full width, 45½ feet by eight feet, filled along the wall with such hardy perennials as Anemone Japonica, six varieties; aquilegias, 10 or 12 varieties; Coreopsis grandiflora, helianthus, gaillardia, rudbeckia (Golden Glow), and R. hirta, Papaver orientale, digitalis, 12 perennial phloxes, a corner of Lily of the Valley, and a few others, and in front of these rose trees, including a bed along the north side about 10 feet wide, to the number of 127, comprising about 100 varieties of roses.

Digitalis and Canterbury Bells in Dr. Storms' Garden

Along the south side and in a bed in the strip south of the house, there are over 40 varieties of native ferns.

Protecting the fern bed is a hedge comprising 23 varieties of lilacs planted close together and arranged so that the colors are mixed. These include Persians, white and lilac, also the cut-leaf which is rare, single and double blue, single and double white, and double cream, pink and very dark purple. This hedge is not allowed to grow more than five feet high. What pruning is required is done as soon as the flowers fade, cutting off the old flower stalks at the same time.

In the north-west corner of the garden, in the shade of a large pear tree, is the wild flower garden where we have —beginning in the earliest spring and coming in succession until the late fall —some rare beauties. This collection comprises: Hepatica, Liverwort, March to May; Claytonia Virginica, Spring Beauty, March to May; Sanguinaria Canadensis, Bloodroot, April and May; Trillium nivale, Early Wake Robin, March to May; Trillium erectum, Purple Trillium, Wake Robin, April to June; Trillium grandiflorum, Large-Flowered Wake Robin, May and June; Viola obliqua, Common Purple Violet, April to June; Viola pedata, Birds' Foot Violet, April and May; Viola pubescens, Yellow Violet, April and May; Arisæma tryphyllum, Jack-in-the-Pulpit, April to June; Polygonatum biflorum, Solomon's Seal, April to June; Vaguera racemosa, False Solomon's Seal, May to July; Cypripedium hirsutum, Yellow Lady's Slipper, May to July; Orchis

One of Dr Storm's Rose Beds

Centre Bed of Phlox Drummondi and Verbenas

spectabilis, Showy Orchis, April to June; Uvularia perfoliata, Straw Bell, May and June; Erigeron annuus, Daisy Fleabane, May to November; Anemone quinquefolia, Wind Flower, April to June; Thalictrum dioicum, Early Meadow-Rue, April and May; Thalictrum polyganum, Tall Meadow Rue, July to September; Impatiens biflora, Jewel Weed, July to October; Eupatorium ageratoides, White Snakeroot, July to November; Solidago speciosa, Showy Golden Rod, August to October; Solidago cæsia, Wreath Golden Rod, August to October; Solidago bicolor, Silver Rod, July to September; Rudbeckia hirta, Black-eyed Susan, May to September; Aster patens, Purple Daisy, August to October.

Along part of the west end is a bed of 21 varieties of Japan Iris, and on the north side of the plot south of the house a bed of digitalis and Canterbury Bells, one of the most charming beds in the garden.

In the centre space a round bed 10 feet in diameter, filled with Phlox drummondi and verbenas, was made. This gives a wealth of bloom the whole season, and comes in nicely for cutting. In the strip beside the house, too, was a bed of strawberries belonging to the boys.

To be able to go into the garden and cut a bouquet of 56 varieties of roses, or six or eight varieties of lilacs, or any number of perennials is a pleasure I would be loath to be deprived of. With such collections as I have here referred to there is no dearth of flowers from early spring until late fall.

The City Vegetable Garden

Rev. P. C. L. Harris, Guelph, Ont.

VEGETABLES fresh gathered from your own garden! No mean dream, is it? A few people in the crowded portions, and most people living on the fringes of a city, can successfully grow vegetables, and, in the growing of them, will develop good cheer, swift blood, muscle and refreshing sleep. They are few who cannot get very "Near to Nature's Heart" at small expense and—a little trouble.

There are many reasons why some people do not make a success of the vegetable garden in the rear of a city house. When that house was built, the earth of the cellar excavation was used to level the lot surrounding the house. That earth is lifeless. To spade it, and sow seed means failure from the start. Trenching well, so as to bring the good soil to the top, the use of well-ripened stable manure, thorough spading, good seed and continued cultivation, spells success from the start.

One prominent reason for failure is—poor seed. It pays to buy your seed from a reliable house. Many so-called seedsmen know very little about the *life* of seeds, and keep them from year to year. These, when sown, fail to germinate, and consequently the amateur gardener is disappointed and disheartened. Let me repeat, it pays to buy your seed from a reliable house, and we have a number in Canada.

If one has had no experience in growing vegetables, it also pays to hunt up some one who has been successful and ask for *pointers*. Gardening is a very *friendly* subject, and the novice will find even a professional always glad to give advice. *That* pays. It will prevent many unnecessary failures.

Do not sow what you do not like to eat. Some people can eat all varieties of vegetables. Others like only a few varieties. Do not sow a large bed of lettuce, when all you need is a couple of short rows. Plan your plot, be it large or small. It pays to measure. I measure for every row and all beds. Your garden will look the neater and you will be better pleased with your efforts. The neater the garden the greater the inspiration to engage in the labor the following year. Leave a little space for flowering plants. They will assist the interest. They will brighten your life. I have been cultivating a vacant lot for two seasons. For years before it was a dumping ground for old harvesters and—weeds, burdocks, thistles and marsh mallows. It has not been a picnic, but I have come out on top, and it has paid. People have stopped to look at my garden. Last season we lived on vegetables and saved a meat bill.

What shall I grow? Well, let us see. A few potatoes—Burpee's Extra Early, Rural New Yorker and the old Early Rose—good varieties. Corn?—well, if you are after something choice and early, try Burpee's Golden Bantam. It's small but, oh, my! There's no mistake about it. The Cory corn is another early variety, and succeeds well where the season is short. For main crop, try Stowell's Evergreen. For Peas—dwarf and early, try American Wonder and Alaska; Burpee's Extra Early, 18 to 24 inches high, a grand pea. Stratagem is a fine pea of medium height, as is also Burpee's Profusion, three feet—one of the best peas to grow. It is a great mistake not to grow some of the taller varieties. Telephone, or its improvement—Boston Unrivalled, Champion of England and Laxton's Evolution. Use four feet wide chicken fence netting, or alder brush, which is much more suitable, if you can get it. Yorkshire Hero is another fine pea. You do not know what peas are like until you have a dish of these large peas on your table.

Beets—Early Egyptian, Dark Stinson, and the Long Smooth Blood-red. I like the dwarf beets, and, for summer use only. When small, served up with butter, pepper and salt, they are delicious. Carrots—Early Scarlet Horn, Oxheart and Danver's Half Long. Do not wait until winter before using the carrots; try them when very young. Long Smooth or Hollow Crown parsnip

is as good a variety as you will want to grow.

I would not advise any one, with a limited plot, to attempt either cabbage or cauliflower.

What about beans? Well, of the dwarf varieties, try Early Yellow Six Weeks, and Burpee's Saddle Back Wax. If you want a dwarf bean quite ornamental, as well as delicious, try Burpee's Blue-podded Butter Beans—tall growing or climbing; White Creaseback—for eating or pickling, none better; White Dutch Case Knife—young pods for eating and beans excellent for shelling; Horticultural, and Lazy Wife's—of fine flavor and valuable for snapshorts. Lettuce—Grand Rapids, Tom Thumb, Hanson, and many others. Onions? Well, yes, try them, but first ask some one who is successful with them. Danver's Yellow and Prizetaker are hard to beat. You will need a row of cress and mustard, and several rows of spinach —the Victoria being a good variety. If you have a rich mellow soil, try a few rows of salsify, or vegetable oyster. A few plants of Scotch Kale will give you fine greens after the frost has come. Cucumbers? Yes, Everbearing, Boston Pickling, Giant Pera and Fordhook White Spine. Emerald is also worth growing. If you want a few squash, try Mammoth White Bush for summer use, and Hubbard for winter.

Now for tomatoes. Buy well-established plants and give them the hottest spot in the garden. Work the ground well. If it is a heavy soil and you can easily get sand, mix quite a lot into the soil, with a liberal supply of manure. After the plants have been well established, put a coating of sand on the ground all around the plants. Use stakes or trellis wires to tie the plants to, and cut out all lateral branches below the fruit. Varieties?—Well, Spark's Earliana, Matchless, Acme and Golden Queen. Try a hundred or so of Paris Golden celery if you want to. The experiment will be interesting.

The quantity of vegetables you can get off of a small plot will amaze you. It is difficult to tell you how to do it. I could shew you how. You will learn, best of all, by going at it yourself. It is an excellent tonic.

How to Start Ferns

Thos. Manton, Eglinton

How can Asparagus and Maiden Hair Ferns be best started? —(Mrs. A. P. H., Prince Edward Co.

Asparagus Plumosus, generally called the Asparagus Fern, is best raised from seed. The seeds can be procured from any of the leading seedsmen. They germinate quickly if soaked for an hour in water as hot as the hand can be held in, and then sown in rich garden soil and placed in a warm window. As soon as the plants are large enough to handle, they should be potted each into a very small pot and kept in a warm, light place. As the pots fill with roots larger pots should be given and extra rich soil supplied. Maiden Hair Ferns are started from ripe spores gathered from strong, well-grown plants.

BULB DEPARTMENT

Questions Answered by Mr. Herman Simmers

Uncovering Bulbs

What is the best time to uncover bulbs which have been protected during the winter, and how should it be done?—(C. J. K., Picton.

To give a definite date one cannot do so; generally towards middle of April if weather continues good. After they have been uncovered for a few days should a frost come afterwards they will not be damaged. To uncover the bulbs remove the litter with a fork, taking care to avoid breaking shoots that are coming through the ground.

Best Bulbous Plant

Is there any bulbous plant more desirable for perennial borders than Lilium candidum.—(H. C., Orangeville.

Lilium candidum has always done remarkably well in this climate. Others have done fairly well but do not increase as rapidly. Lilium auratum, Lilium speciosum, album, roseum, rubrum, punctatum, have been successful, and follow the Lilium candidum in their blooming period.

Cutting Crocus in Lawn

How long should crocus bulbs in the grass be left to ripen after flowering, before the lawn is mowed?—(H. G., Guelph.

It seemingly makes no difference at what stage the tops are cut off, especially if the bulbs are planted deep enough. They are more likely to increase than diminish if cut off early.

Early Spring Work

What work should be done with bulbs during April or early May?—(J. C., Simcoe.

Very little work is necessary except to carefully remove the litter placed there in the fall. All the other work should have been done to the bed in the fall at time of planting.

Bulbs After Flowering

Will you kindly tell me whether a tulip or hyacinth bed can be utilized after the bulbs are done flowering, for cannas, gladioli, Tuberous Begonias, etc., without removing the bulbs ?—(A. E. B., Stirling.

This depends very much on whether you have planted your tulips, hyacinths, etc., deep enough. If you have you may plant gladioli or Tuberous Begonias in the beds, but cannas had better not be as they root very deeply. They are apt to take too much nourishment from the soil for the bulbs to do well another season. As soon as the bulbs have bloomed and tops withered somewhat you can fork the bed lightly and dig some well-rotted manure or artificial fertilizer in the bed. With this treatment good results are assured.

April Planting

Are there any bulbs that should be planted in April?—(S. A., Burlington.

Assuming this to be open air planting there are none that can be planted with safety.

Seeding Down a Lawn

Prof. H. L. Hutt, O.A.C., Guelph

I desire some advice in the matter of seeding down for a school lawn. The soil is very sandy but not barren sand. Garden crops do fairly well in it. Which is it more advisable, to sow the seed in the fall or in the spring? I have heard that if seeding is done in the fall, one bushel of rye per acre should be used with the lawn grass to serve as a foster crop. The rye would come up in the spring and help to form a sod. Would it help to scatter some commercial fertilizer and should it be applied with the seed in the fall, or could that be done as well in the spring? Would a top dressing of manure in the fall, if the seeding is done then, be of much advantage? I have used barley with fair success as a foster crop when seeding in the spring. —(J. W. G., Kingston.

In seeding down a lawn, it is not advisable to use anything as a foster crop. Rye would grow so strong and rank as to nearly choke out the smaller grasses sown at the same time. The best way to get a well seeded lawn is to use a mixture of the hardy native grasses of fine growth. We have found Red Top, Blue Grass, and White Clover, equal parts by weight, make an excellent mixture. The best time to seed down for a lawn is early in the spring, as there is then sufficient moisture to cause early germination of the seeds, and in a favorable season there should be no difficulty in getting a good green sward in a couple of months. The older it gets the thicker it becomes.

When seeding is done in the fall the plants usually have not time for much growth, and a great number are destroyed in the winter. If fall sowing is resorted to, I would recommend giving the soil a liberal dressing of well-rotted manure before winter comes. The coarsest of this can be raked off in the spring before the seed is sown.

The seed should be raked into the soil, and in case of sandy soil in a dry season, it would be best to roll the land after seeding. If the ground is poor and the grass does not come up evenly, this can be remedied by occasional top dressings of well-rotted manure in the fall and raking in additional grass seed in the poorer spots in the spring.

Fertilizing the Market Garden

Prof. R. Harcourt, O.A.C., Guelph

BEFORE the market gardener can intelligently and economically use commercial fertilizers it is essential that he have, first, a clear conception of the needs of the soil under cultivation; second, a definite idea of the nature of the growth wanted, whether for large development of leaf and stem, or for seed and fruit, and how this may be forced; and third, a knowledge of the function of the various constituents of a fertilizer, and the value of different forms of these constituents as found in the various brands of fertilizers on the market.

It is not an easy matter to express exactly what is meant by soil fertility as so many conditions are involved, all of which have more or less influence. A fertile soil must contain, at least, a fair quantity of those constituents that are removed from the soil in maximum quantities by the crops grown. Experiments have demonstrated that plants require at least 10 chemical elements for normal growth and development. Each of these substances has its own particular work to perform and no one can take the place of another. Fortunately, most soils are abundantly supplied with all these essential constituents, nearly all of which are held in such forms that they are not readily leached from the soil.

Plants, however, take up comparatively large quantities of nitrogen, phosphoric acid, potash, and lime, and, as they are removed with the crop, it must follow that in time the soil becomes more or less depleted of these constituents. The organic matter of the soil is the source of nitrogen to the majority of plants, and in its decay the nitrogen is converted into a soluble form which is quickly lost in the drainage water unless taken up by plants. Lime, also, as a result of the many chemical changes taking place in the soil, is continually being carried away in the soil water. Evidence of this is seen in the fact that water collected from the soil or rock contains lime, or is "hard." These, then, are the four constituents which must receive the greatest amount of attention in the cultivation of the soil.

But the presence of the chemical elements of fertility in themselves is not sufficient to insure fertility. To serve as food for plants they must be in a form available to the roots. Water is absolutely essential both for the solution of the food elements in the soil and for their distribution in the plant after they are acquired. As we understand soils, they are made up of particles of various sizes. When it is well drained, the water is held on the surface of these particles, and the interspaces are open, thus making it possible for the air to penetrate into the soils and supply the oxygen essential to the life of the various types of micro-organisms busily engaged with the decomposition of the organic matter. The amount of water held on the surface of the particles depends on their size and shape; the smaller and more irregular the shape, the greater the amount of water they will hold. Consequently, a drained clay soil will hold more water than a sand, and a soil rich in humus more than one poor in that constituent.

Humus not only increases the water holding power of the soil, but it also appreciably effects its general physical condition, and, further, in its decay causes potash and phosphoric acid to be rendered available to plants. Humus apparently has a wider influence on the fertility of a soil than any other one factor. The various essential elements of plant food may be supplied in inorganic forms, but unless humus is present to regulate the general physical conditions and to supply the essentials for the breaking up of the insoluble salts formed in the soils, good remunerative crops cannot be produced. This fact must not be lost sight of, for unless humus is present we cannot hope to get good results from the fertilizers applied.

Nitrogen forces leaf and stem growth and tends to retard maturity; phosphoric acid aids in the formation and transportation of the proteids and seems to hasten maturity, and potash appears to be essential to the formation and transportation of carbohydrates. With many of the crops of the market gardener, especially those sold in the immature state, quality is dependent upon, or measured by, both appearance and palatibility; and palatibility is determined by succulence and sweetness of the vegetable, or its freedom from bitterness, stringiness, and other undesirable characteristics that frequently exist, and that can be largely eliminated by providing an abundance of food for a continuous and rapid development of the plant. Any delay in the growth of radish or of lettuce is largely responsible for the sharp taste and pungent flavor of the former, and the bitterness and toughened fibre of the latter. For crops of this nature, a generous supply of potash and phosphoric acid is essential, but nitrogen is the constituent that should predominate.

Owing to the wet fall and open winter and the consequent leaching away of nitrates, it is possible that nitrate of soda will give unusually good results this year, especially on crops sown in the early spring. While nitrogen may be used freely on some crops when maturity is required, as with the tomato, corn, potato, sugar beet, etc., a soluble form of nitrogen, as nitrate of soda, may be used early in the season to insure a good start, but it should be withheld during the latter stages of growth in order that the ash constitu-

Where Vegetables are Forced

These greenhouses are owned by Mr. John Westwood, of Todmorden. The chief crops grown in them are lettuce and radish. At present they are filled with lettuce, radish, parsley, cress and mint, but the last three crops in small quantities. Mr. Westwood claims that lettuce and radish are the most profitable. The tank in the rear is used for high pressure in the spring and fall. In winter, however, the water supply is taken from a tank in the boiler house. A windmill is used for lifting the water to the tanks, and the pipes are underground and away from danger of freezing.

ents may have a chance to hasten maturity. Too much nitrogen, or nitrogen applied late in the season, will cause a large growth of stem, and prevent the setting and development of fruit.

Regarding the value of the various forms in which the different constituents exist in mixed fertilizers, it may be said that most soluble and active manures produce their principal effect at once and are of little benefit to subsequent crops. Ammonium salts or nitrates give all their effects the first year. Sparingly soluble substances, and those that must suffer decomposition in the soil before they are of service to the plant, as coarse tankage, ground bone, and Thomas phosphate, will, on the contrary, continue to produce an effect over many years. Consequently, the soluble substances give the quickest returns for the money invested. It is hardly necessary to say that soluble manures, as nitrate of soda, should not be applied until planting time, and even then it is best to save part of the fertilizer and apply small portions at intervals of two or three weeks.

As the vegetable growers understand the true nature of the fertilizers and the needs of the soil and crop, the tendency will be to buy a fertilizer containing a single constituent to supply the known deficiency of the soil or the element particularly required by the crop. At present, too frequently so-called complete fertilizers, which are specially recommended for certain crops, are purchased. These may or may not answer the purpose under the particular conditions. Fertilizers are too expensive to be applied at random. It is essential that a clear conception of what is required be formed and then that the constituents that will produce the required effect be purchased. To do this a gardener must study his soil and crops and understand the fertilizer or mixture of fertilizers he intends using.

During the last three months we have received a number of requests to analyze mixed fertilizers. It does not seem to be generally known that according to a law enacted by the Dominion Government at Ottawa, no fertilizer selling at more than $10 a ton can legally be sold in Canada without a guarantee giving the percentage amount of the various constituents contained in it. While we are willing to do all we can to help the vegetable growers with their fertilizer problems, we must refer this portion of the work to the Inland Revenue Department of Ottawa, and we would advise all purchasers to demand the results of the analysis made in that department.

Guarantees alone will not, however, wholly protect the buyer. He must not only know the percentage composition of the fertilizer and the nature of the materials from which it was prepared, but he must also be able to determine from the analysis whether there is a proper relation between the guarantee and the selling price.

There appears to be a growing tendency on the part of the vegetable growers to use fertilizers. Before investing much money in them let the grower study his conditions and study the fertilizer. There is a place for them when properly used, but when improperly applied, they fail to give results. They will not take the place of cultivation, and should be looked upon as adjuncts to good general manuring and cultivation.

Growing Cucumbers

"My cucumbers are started about April 1 in six inch pots," said Mr. Geo. Benner, of Burlington, to THE CANADIAN HORTICULTURIST recently. "They need very careful watching for the first three weeks, as too much water when the plants are young is sure to cause damping off. The plants should not be set out before May 24, because a slight cold snap so checks them that much time is needed by them to revive from the setback. When transplanted from the pots without disturbing the roots, the plants go right ahead.

"I set them out in rows five feet apart and four feet apart in the row. When set in this way the runners can be turned to one side and cultivation be kept up longer one way. They need a rich soil of sandy loam that retains moisture well.

"Early White Spine," continued Mr. Benner, "is the best all-round table cucumber. It holds its color well and suits the early market. Last year I let many of my cucumbers ripen and supplied Ontario seedsmen with about 300 pounds of first-class seed."

Fertilizer Formulæ

Frank T. Shutt, M.A., Chemist, Dominion Experimental Farms

With rich garden loam, reinforced with well-rotted manure, there is seldom occasion to use fertilizers. In many instances, experiments alone can answer the question if fertilizers are necessary or will prove profitable. In many market gardens and orchards, however, the soil has become so depleted that special fertilizers are frequently used. Flower beds, and lawns, too, require special applications if satisfactory results are to be obtained. A careful study has shown that the use of the following mixtures gives satisfactory returns.

For general garden crops, including vegetables, small fruits, etc.: Bone meal, 1½ parts; superphosphate of lime, 1½ parts; sulphate of potash, 1 part. This should be applied at the rate of 800 to 1,500 pounds per acre, according to the condition of the soil. Thoroughly incorporate with the surface soil at the opening of the season. After growth has commenced top dress with 100 pounds of nitrate of soda per acre. If the foliage is yellowish, or the growth lacks vigor, repeat the application of nitrate three weeks later.

For flower beds: Bone meal, 4 parts; sulphate of potash, 1 part. Work well into the soil at the rate of 4 pounds per square rod. During the early part of the season top dress with nitrate of soda at the rate of one-third to two-thirds of a pound per square rod.

For lawns: Bone meal, 2 parts; superphosphate of lime, 2 parts; muriate of potash, 1 part. Apply at the rate of five pounds per square rod. At intervals of two to three weeks during the earlier part of the season top dress with nitrate of soda at the rate of half a pound per square rod.

The Seed Control Act

The question of guaranteed seeds is one of great interest to the market gardener. In some sections a few gardeners believe that the Seed Control Act passed by the Dominion Government in 1905 protects them against impure seeds, seeds that are not true to name or seeds that do not germinate. THE HORTICULTURIST recently wrote to Mr. G. H. Clark, seed commissioner for Canada, asking for particulars regarding this bill and its relation to market garden seeds. In return a copy of the Seed Control Act was sent. Section 3 reads: "Any seeds of cereals, grasses, clovers or forage plants," and section 4 refers to "timothy, red clover and alsike seeds," but no provision is made in the bill that will apply to the seeds of any kinds of crops that are generally considered to come under the category of hoed crops.

In answer to questions asked him, Seed Commissioner Clark wrote: "Judging from the development of the guarantee system in foreign countries, it would seem clear that as soon as there is a sufficiently strong demand on the part of gardeners for seeds of guaranteed germination qualities, so soon will we have Canadian seed merchants rise to the occasion and cater to those demands. As to whether the seed user could secure conviction and damages against the seed merchant, on account of supplying seeds not true to name, would depend largely on the contract between them. Seed merchants, as a rule, take every precaution to guard themselves against liability because of such conditions."

Spraying is becoming more popular every year and every fruit grower in this section will soon own a sprayer.—(C. F. Bailey, Coldbrook, N.S.

The Canadian Horticulturist

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THE DOMINION CONFERENCE

The Dominion conference, together with Hon Mr. Fisher's promise to convene similar gatherings at regular intervals in the future, has opened a new era for the fruit industry of Canada. It has injected a national spirit among the fruit growers in the different provinces that has been lacking sadly in the past. The very vastness of this country, of which every Canadian is so proud, has made it impossible for the fruit growers in the various sections of the Dominion to meet together for the consideration of matters relating to their interests, that have been of national importance. This has prevented their understanding each other's conditions as thoroughly as was desirable, and in many ways has retarded the development of the fruit industry.

Now, all is changed. The recent conference not only brought representative delegations of growers from all parts of Canada into close touch with each other, but served to show them that the interests of the growers in the different provinces, instead of being inimical, are, in the main, identical. The friendly spirit that animated the discussions proved that the delegates realized the identity of their interests. It means that in future many matters that hitherto have been discussed from a sectional viewpoint will be dealt with in a broader spirit, while the regular recurrence of these conferences will make possible more rapid improvements in matters relating to the fruit interests of the Dominion as a whole, than has been the case in the past.

So many matters of widespread importance were dealt with, it is impossible, even yet, to fully grasp the effects that will follow from the conference. Possibly the two most important decisions reached were those relating to the adoption of a "fancy" grade for apples, and the defining of a No. 2 apple. The resolutions relating to crop reports, railway regulations, and the development of foreign markets, however, are also of great importance.

It is most unfortunate that provision was not made for the conference to last at least a full week. Even that time would not have been sufficient to have permitted a thorough discussion of all the matters that were on the program. So limited was the time at the disposal of the delegates, many of the resolutions adopted were drafted in a most hasty nature. The delegates realized this, but felt that the resolutions would serve to show the Government what the desires of the fruit growers are, and they felt safe to leave the working out of these desires in the form of practical legislation to the Fruit Division of the Department of Agriculture. One point made manifest was the complete satisfaction that is felt with the results of the Fruit Marks Act. The feeling was that the Act has not only been a complete success, but that it should be strengthened. This was manifested by the various resolutions relating to it that were adopted.

It is regrettable that owing to lack of time many matters that were on the program were not discussed. These include such subjects as those relating to nurseries, fruit conventions and institutes, fall fairs and fruit exhibitions generally, judging and score cards, cooperative selling, commercial agents abroad, and many others. Regret that these were not dealt with is tempered somewhat by the knowledge that there will be another conference at which it will be possible to deal with them.

The action of Hon. Sydney Fisher in presiding at the various sessions of the conference was deeply appreciated by the delegates. Few of those present expected to find the Minister of Agriculture as thoroughly informed on matters relating to the fruit industry as he showed himself to be. Much of the success of the conference is due to the able manner in which Hon. Mr. Fisher fulfilled his duties as chairman, and to the knowledge regarding Dominion legislation and international subjects relating to the fruit industry that he brought to bear on certain of the matters discussed. The growers departed for their homes feeling that they had left their views, as expressed by the resolutions, in the hands of a Minister who thoroughly understands their desires and who can be depended upon to look after their interests.

On the whole, the conference was a decided success. The most important matters were discussed fully and disposed of in an intelligent and satisfactory manner. Questions that long have needed an answer were disposed of in a manner that should benefit the industry. May the national spirit it created grow and prosper until it has cemented the fruit growers of the Dominion in a bond that will benefit them individually and collectively as well as Canada and the Empire as a whole.

BEAUTIFY YOUR TOWNS

Those who read the report of the address by Mr. J. Horace McFarland that appears in this issue, cannot fail to be filled with a desire to do something by which the home surroundings will be made more beautiful. Public-spirited persons should be inspired to stir up some movement that will result in the town in which they belong being transformed. Many Canadian towns and cities need some transformation. The mere mention of the desired changes, however, when associated with the thought of the probable cost, generally results in no action being taken.

The success that followed the efforts of a few high-minded citizens of Harrisburg should tend to encourage towns to make a forward step. In that city $1,090,000 has been spent in four years, and yet the tax rate has increased only one-half mill. In return for this trivial increase in the tax bill the citizens have pure water, perfect sewage system, lovely parks, clean streets and numerous other pleasure-giving and health-giving blessings that were formerly unknown to them.

This resulted from the earnest labor of a few. When the council would not grant money to make the beginning, the earnestness manifested itself in a handsome subscription. In a short time $5,000 were subscribed and a careful and systematic plan of educating the citizen to the needs of their city, culminated in the election of a council with power to grant $1,090,000 to civic improvements. Have these people regretted the vote of four years ago? The fact that $800,000 is voted for further improvements in 1906 is sufficient answer.

The expenditure of such a large sum is not necessary in every city. In many cases our horticultural societies could do much to secure funds large enough to make noticeable changes and improvements. Excellent opportunities are offered for educating the people to the advantages of having streets and parks and lawns beautiful, to say nothing of the water and sewage systems. The influence for good on the children, of parks with their trees and flowers, and birds, cannot be overestimated. As Mr. McFarland happily put it, "Parks are cheaper than policemen."

If any proof of the excellence of The Canadian Horticulturist as an advertising medium is needed it is afforded by the frequent requests that are received for the premiums that are given to readers who buy from our advertisers. Here are four received recently: Mr Philip H. Gardner, of Mitchell, secured a $500 piano from the Gerhard Heintzman Piano Co., one of our advertisers; Mr. David M. Ross bought $12.25 worth of nursery stock from the Smith & Reed Co., of St. Catharines; Mr. LeRoy Curtis, of Leamington, purchased $30.40 worth of fertilizers from W. A. Freeman & Co., of Hamilton, and Mr. J. C. Gilman, president of the New Brunswick Fruit Growers' Association, bought $82 worth of goods from C. W. Van Duzer, of Grimsby. Each of these gentlemen has been sent a dollar as a premium for buying from our advertisers and for telling them that they saw their advertisements in The Horticulturist. With such evidences of direct results gained by advertisers who use our columns is it any wonder that our advertising patronage has doubled every year for the last four years?

The directors of the Ontario Vegetable Growers' Association last month showed that they are wideawake to the interests of their members when they arranged to appoint twenty-five or more paid crop correspondents throughout the province, that they may issue regular monthly crop reports next summer. Nothing they can do will be as much appreciated by their members as these reports if they are managed properly.

No man deserves as much credit for the success of the recent conference as the chief of the fruit division, Mr. Alex. McNeill. The careful manner in which the details had been planned reflects great credit on his work. This fact was appreciated by the delegates, although, like many other matters, time did not permit of its being mentioned in the form of a resolution.

One effect of the recent fruit conference will be to arouse greater interest in the affairs of the provincial organizations. The honor of being a delegate to the next conference is likely to be eagerly sought.

Now is the time to start planning for the next Dominion conference.

Shipping apples in boxes is still in its infancy. Boxes cost more and there is more work in packing. The barrel is in greatest favor here, although boxes should be all right for selected stock.—(C. F. Bailey, Coldbrook, N.S.

Fruit Packing and Fruit Packages

J. J. Philp, Winnipeg, Man.

IN discussing the packing and packages of fruit the fact that different localities have different methods of working, not only as to the different styles of the package used, but also as to the manner in which they are packed, must be considered. Winnipeg is the best place in Canada for studying those several methods as well as for offering opportunities for judging the merits in the light of actual results.

It must not be assumed that because the writer does not approve of any particular style or styles of packages, that he is hostile to the trade of the locality from which those packages come, nor is it to be assumed that in all cases the packages so condemned are a failure as a carrying package; or in other words, that the fruit packed in those packages is going to spoil because it is in those packages. What is wanted is a selection of the best as proven by past experience, and then an almost absolute uniformity on the part of the shippers, not only from a locality, but from the whole province.

The advantage of having a uniform package can be illustrated by supposing a merchant in telephone communication with a customer who wants a few boxes of pears. In the event of the order being for Washington Territory, California, Oregon, or British Columbia pears, the merchant has to give only the name of the place, the variety, and the price, and his customer knows at once what he may expect to get. Those places have a package so nearly uniform that there is practically no variation in the quantities contained, and in every case they will be carefully wrapped in paper procured expressly for the purpose. Supposing, however, the deal is being made for a lot of Ontario pears, the amount of explanation required as to the size of the box or crate, the quantity it contains, and the condition they are in, will take up time, and require the most minute description. Indeed he will be a most optimistic dealer who will in any but very exceptional cases, and then only after the most careful examination, guarantee that what he has to offer can be depended upon to turn out satisfactorily in every particular. Want of uniformity in size and in ripeness often causes a lot that might otherwise, with more care and attention to selection, turn out satisfactorily, to be considered an inferior lot. Their value as a first-rate article for the retail merchant to handle is very much lessened.

That the box used by the California packers presents the best package for the shipment of pears, and peaches, will be admitted by all who have had an opportunity to judge their merits and compare them with those in use in Ontario. Not a little of their superiority consists in the convenience with which cars can be loaded, by putting the boxes on their side across the car, leaving a space of from one and a half to two inches. Strips should be laid on the top of the boxes flush with end and lightly tacked to each box. Have the ends of the strips come out close to the side of the car. The next row can then be placed on the top of the first. They can be piled six or eight tiers high, and only touch each other at the ends. Bring the piles forward to nearly the centre of the car, and then put in a strong stanchion, nailing firmly. The car is then loaded so firmly that the fruit would hardly be displaced if the car was derailed. In refrigerator cars which would be used for this purpose a perfect system of ventilation will thus be secured, and every box will get the benefit of the circulation of fresh cool air, whereas with the numerous and varied collection of packages in use in Ontario this would be impossible.

This is the way I would recommend for shipping all early apples, such as Red Astrachans, Alexander, Wealthy, and indeed, all varieties, either cooking or table apples, up to the time that the fall apples come in, when they can be more profitably shipped in barrels.

Inquiries made among the merchants throughout the country has shown that not a few of them are in favor of boxes for even the earlier fall varieties. As some of them put it, they can sell a box often where the capacity or the facilities of the customer would not allow him to handle a barrel, and when he finishes that one he comes back for another.

In grapes the present style of baskets is probably as good as anything that can be procured, but something ought to be done to compel a strict uniformity of shape and weight. The manner of loading cars with these baskets can, however, easily be improved on. To pile those light, fragile baskets as they often are, 12 to 14 high, with the weight of all the upper ones resting on the lowest tier, is almost certain to result in those beneath being destroyed. I have seen them crushed almost flat. This could be overcome by a light double deck, which would not only carry the weight of the upper half but secure much better ventilation.

Prince Edward Island Notes

Father A. E. Burke, Alberton

THERE has been little trouble this year in finding a local market for all the apples harvested here last fall, and many more. Still, we see by the press that Mr. F. G. Bovyer, of Georgetown, with Senator Ferguson, has made the usual winter shipment of Ben Davis apples to Britain. The prices for prime fruit of the long-keeping sorts on the other side have been all that could be desired.

NO BREAKDOWNS

In striking contrast to last year, this year has lessened the risk to young and closely planted orchards of any breakdowns from snowbanks to a minimum. The ravages of the past season are, however, quite manifest in places, and something should be done to clear away the damaged and diseased portions of orchards this spring. The instructor could not possibly get round to all who requested his services last season; it is to be hoped that at least the necessary knowledge of his methods will be well within the reach of all this year. It is useless to plant trees if they are not kept in such a way as to be of use and profit to the growers. Besides a badly kept orchard, like badly kept fields, are a severe reflection on the owners, as well as a general source of disedification. Repair the damaged trees of last year or remove them.

DEFINE TWO'S AND THREE'S

Commercial agent at Leeds, Jackson, writes, asking for a properly packed no. 2 apple as an essential to the British trade. "It is just as necessary that the XX (no. 2) apples should be as well graded and packed as XXX (no. 1), and it is from these apples that the farmers of Canada would make their largest profit, because if they are not shipped they are an absolute loss." However much or little we may assent to this latter opinion, there can be no doubt but that the time is ripe for a more complete classification of our apples under the Marks Act.

BRITISH COLUMBIA APPLES

The ex-president of the Fruit Growers' Association of Prince Edward Island, Mr. Edward Bayfield, is sojourning in British Columbia, and writes us in glowing terms of the fruit of that rich province. "The sooner we of the east disabuse our minds of the idea that British Columbia cannot grow superb apples," he says, "the better; for now that they have taken to their production in the higher areas among the mountains, they are much superior to the product of the low sections. I have eaten Spys out here that were superior in every way to the best Spys of Ontario. The fruit-growing possibilities of the country are immense. It is more than likely that Japan will afford a good market for much of the coast fruit. By Commercial Agent McLean's report we see that they would gladly exchange their oranges for our apples."

The Fruit Trade at Montreal

E. H. Wartman, Montreal

The apple may well be called the king of fruits. Its longevity under proper conditions makes it bring a large revenue to our country. The juices and tender pulp make it a general favorite. At present Montreal has a very short crop of apples stored. Five thousand barrels would be the extreme figure, and of these perhaps 60 per cent. are second quality.

A large number of barrels are marked Talman Sweets. This apple is best known in country homes where it is called the family apple. In the city it is not thought so much of and usually brings a low price, not as much as it should, considering its good keeping qualities and adaptation to various uses.

One apple a day furnished each inhabitant of Montreal and suburbs, would mean 800 barrels; one week at this rate would completely exhaust present store. However, when prices run $4 to $5 a barrel for No. 1, the average mechanic gets a small supply. The price is likely to run much higher before the new crop is fit for use in July.

Bananas and oranges, however, are within the reach of the masses. Fifteen years ago this month I paid 50 cents per dozen for bananas, to-day 20 cents would buy the same. This is due to the large production on banana plantations, encouraged by increased consumption. It is not an uncommon thing to get a piece of banana pie, but 20 years ago it was one of the unknown dishes. The month of March, too, generally brings large quantities of maple sugar and syrup. This has a tendency to make dull sale for fruits of all kinds. Although one kind of fruit may run very high in price, yet there is always a substitute to appease the appetite. The export apple trade has not been as remunerative to some Montreal men as could have been wished this year, but they consider it largely their own fault. Men of 20 years' experience have lost money although it was a record year for making money. No. 1 Spy, Baldwin, King, Russet, and Greening have sold throughout the season at 18 to 25 shillings. What better prices could be expected. Buyers should remember that goods well bought are half sold, but it takes some artisans a long time to master the art of packing fruit. This is the secret of success.

Our Nova Scotia Letter

G. H. Vroom

Perhaps in no other province in Canada is there such a diversity in the methods employed in the fruit industry as in Nova Scotia. The fruit houses along the railway are used for storing as well as packing fruit. I believe I am well within the bounds of truth when I say that 80% of the fruit stored in the fruit houses is packed by the grower and bought by the dealer in that condition, and the result is lack of uniformity and a very irregular pack. From the up-to-date grower the dealer gets a first-class pack, but from the grower who packs his fruit according to the ideas that have been handed down from one generation to another by people who do not realize that the world is moving and that the consuming public are demanding a better article, the dealer gets poorly graded fruit.

On the other hand, when the dealer buys the fruit not packed but just as it comes from the tree "and usually at a big price," he thinks he must pack and sell everything and he puts a lot of trash marked No. 3 on the market, and it is having a depressing effect. This applies to the local market in a large measure. One great fault with the Nova Scotia fruit grower is the tendency to dump an inferior article into the local markets. This grade of fruit should never leave the farm but should be given to the stock. It is the exception and not the rule to find first-class fruit in the local markets.

What is the result of all this? It is that other provinces are sending good fruit into a fruit-growing locality, while that locality is sending its fruit to a foreign market. This is not as it should be. The apples in Nova Scotia were only fair at picking time last fall and the mild winter has not been favorable for keeping fruit in storage, and consequently the output at present is rather over ripe, and in some instances subject to black spot. The No. 1, or first grade, has upon inspection been found good and well packed. The No. 2 grade has been found inferior. Perhaps a definition for a No. 2 would be a good thing.

Toronto Growers' Monthly Meeting

Increasing interest is being taken in each successive meeting held by the Toronto vegetable growers. At a special meeting on March 17, over 70 members were present. Celery growing was taken up by Mr. Harris, the celery king, of Humber Bay. Messrs. Thos. Courtice, J. McKay, Joseph Rush and George Syme took part in the discussion that followed. The cultivation of beets was dealt with by Mr. Albert Shuter. Mr. James Stevens, of Todmorden, gave an interesting talk on growing cabbage, and the shortcomings of the present tariff rates.

The membership of the association has been increased until it is now nearing the 200 mark. This necessitated the election of two more members for the executive board of the provincial association. Messrs. John McKay and Albert Shuter were unanimously chosen. The following correspondents were selected to furnish crop reports during the coming season: Messrs. K. Gibbard for the east, Joseph Rush for the west, and Albert Shuter for the north.

At the next meeting on April 7, Mr. H. Reid will discuss glass in its relation to outdoor work; Mr. James Dandridge will take up the growing of early potatoes, and Mr. James Gibbard will deal with early tomato growing.

New Fruit Growers' Association in Southern Ontario

A number of fruit growers of the Winona-Grimsby district met in February and organized an association, to be called the Southern Ontario Fruit Growers' Association. The purpose of the new organization is to promote the best cultural methods and, by united effort, to seek to apply the principles of co-operation in the packing, sale and transportation of their products. A resolution was passed to the effect that "the members of the Southern Ontario Fruit Growers' Association desire to express their appreciation of the work done by the Niagara Peninsula United Fruit Growers' Association, but as they realize the difficulties that the members of that association in this district labor under in attending meetings at such a distance, they consider that an organization in this district, working in co-operation with the one in the east, would be in the interest of fruit growers in general."

The following officers were appointed: Pres., Jonathan Carpenter, Winona; v.-pres., Geo. Awrey, East Hamilton; sec.-treas., E. M. Smith, Winona. It was decided to have as many directors as there shall be sub-organizations having 10 paid members within its boundaries for the first director; for the second director, 30 members; for third director, 60 members; for the fourth director, 100 members; for the fifth director, 150 members within the sub-organization, and by whom the directors shall be elected.

Meetings have been held at Stoney Creek, Winona, Grimsby, Beamsville and elsewhere, and sub-organizations have been formed at each of the places. Other sections promise to do likewise before long. The Southern Ont. Fruit Growers' Assn. bids fair to become one of the strongest and most useful organizations of its kind in Canada.—(A.B.C.

The Basket Situation

The Hamilton branch of the Vegetable Growers' Assn. held a meeting Sat., Mar. 10, and another on Sat., Mar. 17, to discuss the basket situation. It appears that all the basket mfrs. have combined for the purpose of advancing and maintaining a fixed price on baskets for the coming season. Prices have been received from most of the mfrs., and they are all the same, namely: 11 qt. fruit baskets with covers, $42 per M; without cover, $34; 6¾ qt. grape baskets with cover, $36 per M; without covers, $28; berry boxes, $3.50 per M; 24 box crates, $11 per M; Lena covers, $10 per M; wood covers, $6 per M. These prices are considerably in advance of last year's. On 11 qt. baskets there is an advance of $7 per M, and on 6¾ qt. baskets an advance of $4. This is a very serious matter, when consideration is given to the large number of baskets required by the members through this district. If the crop should be as large this season as it was last, the members will have to pay about $25,000 more for their baskets.

The growers as yet do not know what to do, but it is expected they will decide to take legal action as against a combine should the manufacturers not lower their prices.

Important Questions Discussed

The newly formed Southern Ontario Fruit Growers' Assn. held an interesting meeting at Grimsby on Mar. 2, Cooperation, quotations by dealers and shippers, transportation facilities, and the telephone service were ably discussed by leading members of the assn.

In introducing the subject Cooperation in Packing, H. L. Roberts, said that 4 to 10 growers should unite and have their fruit packed in a central packing house by competent men. Then it should be sold direct to the trade or to a local dealer. The telephone question was ably handled by W. H. Brand, H. L. Roberts and S. Culp. It was pointed out that another line is needed between Winona and Jordan, and a committee was appointed to interview the Bell Telephone Co. and see if something could not be done to give a better telephone service between Stoney Creek and Jordan Station.

In dealing with the question of quotations on the various fruit crops, J. A. Livingston pointed out that the fruit business is injured every year and the markets demoralized by dealers under-quoting each other. The general opinion of the meeting was that the dealers should arrange to give uniform quotations. A committee was appointed to interview the dealers regarding this proposal. Transportation facilities were dealt with by E. D. Smith, M.P., who showed that the express rates are exorbitant, and the freight service practically useless. He compared the freight service given in Ont. with that in Eng. and showed that Canadian ry. cos. could give the Canadian growers much better service if they tried. The light and weak baskets, that are being supplied by most of the basket manufacturers also were referred to. It was pointed out that many baskets went to pieces during transportation, and he urged the members of the assn. to make arrangements with the basket firms to supply them with better baskets, even though they had to pay a higher price. In reply, it was claimed by C. W. VanDuzer that the fruit growers themselves were largely to blame for the inferior baskets that were being made. They did not want to pay high prices, and the manufacturers vied with each other in producing cheap baskets.

Experiments in Orchard Culture

A bulletin on Experiments in Orchard Culture has been prepared under the direction of Prof. W. M. Munson, of the Maine Agricultural and Experiment Station. It contains a report of work done on the farm of Mr. Chas. S. Pope, Manchester, Me., and includes a discussion of cultivation and mulching as methods of treatment for orchard lands; stable manure compared with concentrated fertilizers; the Fisher formula, orchard renovation, top-grafting of orchards, and the effect of cultivation upon the keeping quality of apples.

Results in the "renovation orchard" show plainly that with proper care and food there need be no "off year," even with the Baldwins. As might be expected, better results were obtained from the application of a complete fertilizer than from the use of any one or two of its separate components. The severe winter of 1904-5 injured many trees, but where good cultivation and feeding are practised the trees are rapidly recovering

About 20 Ben Davis trees which were top-grafted two years ago to Baldwin, Sutton, Jonathan and Spitzenburg, have all made a remarkably strong growth and in some cases fruit buds are developing, but conclusions are not drawn from this work as yet.

Results of the keeping test indicate that while the color of the fruit from sod-grown trees is unquestionably better than that from cultivated trees, there is very little difference in the actual keeping quality of such fruit.

Bulletin 122, giving full details of the work in question, will be sent free upon application to the Maine Agricultural Experiment Station. In writing, please mention this paper.

Presents for Our Readers

Our readers will be given their choice of the following premiums, when purchasing goods from our advertisers, if they will tell them that they saw their advertisement in THE CANADIAN HORTICULTURIST: 3 months renewal subscription to THE HORTICULTURIST; 1 Baby Rambler Rose; 1 Herbert Raspberry; 1 Boston Ivy; Book on Strawberry Culture; Collection of 6 Tuberous Begonias; Sweet-scented Calla Bulb; New Grape Vine; New Fern Nephrolepsis Piersoni; Large Size Package "Helen Pierce" Sweet Pea, new; New Dahlia "Mrs. Roosevelt," new; Book on Bulbs and Bulbous Plants; Book on Fertilizers; Book on Injurious Insects, Plant Diseases and their Remedies; Book on Onion Culture; Book on Tomato Culture; Book, Your Plants, House and Garden; Hydrangea paniculata grandiflora; Collection of 3 Canna bulbs; Collection of 6 Garden Vegetable Seeds; Collection of 6 Garden Flower Seeds; Collection of 6 Gladioli Bulbs. To the reader purchasing goods to the greatest value from our advertisers in the April issue, we will give a $5 cash prize. It is no trouble to win a prize. Just tell the advertiser when writing, that you saw their advertisement in THE HORTICULTURIST, and then make application at once to THE CANADIAN HORTICULTURIST for a premium. Write the Advertising Manager, THE CANADIAN HORTICULTURIST, 507-508 Manning Chambers. Toronto, Ont

I would canvass for THE HORTICULTURIST for two reasons. First, because I believe it to be the best magazine on horticulture I have yet seen, and secondly because it is Canadian, "made in Canada," a text for which I always have a sermon.—(D. C. Crosby, Berwick, N.S.

The Dominion Fruit Conference

(Continued from page 82)

Mr. Chaplin, who represented firms in Great Britain interested in the auction sales system, stated it is impossible for British buyers to buy from Canadian dealers all XXX apples, as the Canadian dealers use their XXX apples to sell their inferior trades. When British dealers know that they can get all the XXX apples they want, they will be willing to buy f.o.b. but not until then. This ended the discussion at this point, Mr. Peart's resolution being referred to the resolution committee, and afterwards reported and adopted as here published.

THE FRUIT MARKS ACT

The liveliest discussions of the conference took place in regard to the proposed amendments of the Fruit Marks Act.

A resolution was submitted by the resolutions committee, favoring clause 4 in the Fruit Marks Act, being so amended as to require the markings on the packages to be made in letters of not less than a ½-inch in length. The resolution, which read as follows, was adopted:

"Every person who by himself, or through the agency of another person, packs fruit in a closed package intended for sale, shall cause the package to be marked in a plain and indelible manner, in letters not less than ½ an inch in length, before it is taken from the premises where it is packed, etc."

The committee also reported in favor of clause C of the Fruit Marks Act being struck out and the following words substituted: "With a designation of the grade of fruit which shall include one of the following four marks: 'Fancy,' 'No. 1,' 'No. 2,' 'No. 3.'" The effect of this would be to do away with the X, XX, and XXX marking that is now commonly used. Mr. Brodie stated that growers frequently marked their apples XX only to have the dealers mark an additional X on the barrel, after they buy it, without taking the growers' name off the barrel. This leaves the grower open to prosecution for fraudulent marking.

Mr. Fisher asked if the shippers would be likely to object to the use of only one grade mark, or if such a change would be likely to affect conditions on the markets to which the apples are shipped. Mr. Graham replied that the trade would quickly learn the change and no ill effects should follow. Mr. Parker said that Nova Scotia growers are strongly in favor of such a change.

Mr. Fisher explained that when the Act was passed there were a considerable number of people in the habit of using the X marks, and they objected to the use of only one set of marks. It was claimed by Mr. Burrell that growers and dealers in the United States have run the X marks to death, until they mean but little. He thought the time had come when Canadian XX 1, 2, 3's should mean more than any X X marks that can be used.

Mr. Manson reported from Manitoba and Mr. Starr from Nova Scotia that the 1, 2, 3 marks have been used in their provinces for years with great satisfaction. The proposed change was adopted unanimously.

THE "FANCY" GRADE

Another resolution reported by the resolutions committee recommended that section 61 of the Fruit Marks Act, which describes XXX fruit, be amended as follows: "No persons shall sell, or offer, expose, or have in his possession for sale, any fruit packed in a closed package, upon which package is marked any designation which represents such fruit as of fancy quality unless such fruit consists of well-grown specimens of one variety, sound, of uniform size, and of good color, for the variety, and of normal shape.

This brought on a lively discussion, in opening which Mr. Burrell said that in British Columbia the growers feel strongly that either the XXX grade should be made to consist of nearly perfect fruit, or there should be a new class created to include such apples. Ontario growers seem afraid that were this done it would relegate practically all their XXX apples to the XX grade. While this might be the case in Ontario, it was not so in British Columbia where they can produce a much larger proportion of perfect fruit.

FANCY GRADE

Mr. Robert Hamilton, of the Department of Agriculture, reported that for years he had noticed packages of apples that contained fancy apples that had been packed in a lower grade of fruit. Mr. Eaton said that the Nova Scotia delegation was unanimously in favor of the establishment of a grade that would be above the usual XXX grade. They would favor calling it No. 1 extra, rather than fancy. Mr. Graham was willing to favor a fancy grade if the apples were to be of a larger size than the usual XXX. He was afraid that as there is not enough apples now, were fancy apples to be placed in a grade by themselves,

A. McNeill, Ottawa

Chief of the Fruit Division, whose hard work had much to do with the success of the Fruit Conference

there would not be enough good apples left to make a strong XXX grade.

Mr. Burrell: "In British Columbia we can put up thousands of barrels of what you call XXX apples, with this exception, that they are practically perfect. This being the case we feel that it is only right that we should have a grade for such apples, that we may be able to sell them for what they are worth."

Mr. Fisher: "As I read the resolution, it means that 'fancy' must consist of practically perfect fruit, while the definition of XXX fruit requires that only 90 per cent. shall be perfect."

Mr. Grant: "In the Western States, the fruit growers are the most progressive and enterprising in the world, and they force our growers in British Columbia to stay awake nights to study how best to compete with them. We may not be able to beat them, but we are able to hold them. We find we must try to reach perfection. We have thousands of boxes of perfect fruit, and we feel that we should get credit for such fruit, and that there should be a grade for it."

Mr. Eaton: "In Nova Scotia we have been in the habit of packing an extra grade of fruit and of calling it No. 1 extra. Our best fruit has been picked out and used in this grade."

Mr. Parker: "As I understand the matter, the British Columbia growers make two sizes of their No. 1 as we do in the east. Mr. Boies, the expert from British Columbia who visited Nova Scotia last fall, graded the apples according to color and size. We have never gone into it as thoroughly as that, but believe we must if we are to keep up with the rest."

Mr. Smith agreed with Mr. Graham that the question of size should be considered, and that fancy apples should be above the normal in size.

Mr. Ross: "We Ontario growers appreciate the ability of our British Columbia friends and their desire to put up a fancy article, but if such a grade is accepted they will practically have a corner on it. (Cries of "No! No!") They have thrown down the gauntlet to us and we are inclined to accept the challenge. (Applause). But if the definition of fancy as contained in the resolution is adopted, it will be a great hardship if a grower is fined because there may be a single apple in the box or barrel that is not fancy. It is practically impossible to pack a box of perfect fruit, where growers are troubled with apple scab and codling moth, as they are in Ontario. If I am correctly informed, British Columbia growers are not entirely free from these troubles, and there is no telling how soon their difficulties in this regard will be greatly increased."

Mr. Burrell: "We from British Columbia appreciate the remarks of Mr. Ross, but we feel that it would be dangerous to start to lower the grade." (Applause).

Mr. Fisher: "It strikes me it would not be wise to put such fancy apples in barrels and that they should be packed only in boxes." (Applause).

Mr. Graham: "Mr. Fisher's suggestion is an excellent one. I feel that our No. 1 is going to be our commercial apple, and that if we try to put up fancy apples in barrels they will conflict with our No. 1, but if they are put up in boxes it will be all right."

Mr. E. D. Smith: "Were all the fancy apples to be packed in boxes, it would be a great hardship on the big shippers, as they would be forced to send boxes to every orchard they picked, as well as barrels, which would greatly increase the labor and expense."

It was pointed out by Mr. Sherrington that the system of having buyers send gangs to the orchards is one that should be discouraged, as all apples should be packed in central warehouses, so that a uniform grade can be secured. He was in favor of having fancy apples packed only in boxes, so as to prevent confusion in the minds of packers, many of whom, even yet, do not know what constitutes a No. 1 grade. He favored the abolition of the auction sales system.

Mr. Fisher: "There is no definition of the different grades, except No. 1. If we adopt a fancy grade we will have to define it."

Mr. Bunting agreed with Mr. Fisher's suggestion regarding packing fancy fruit in boxes. He believed the time is coming when the bulk of the fruit of Ontario will be handled on the co-operative principle. While admiring the enterprise of the British Columbia growers, he doubted their ability to put up such a large proportion of perfect fruit. He believed Mr. Ross voiced the feeling of the Ontario growers, when he sounded a warning in regard to the difficulty of packing nothing but perfect specimens. While attending various exhibitions, such as the Pan-American, and the New York State Exhibition, he had carefully examined the fruit exhibited, and although it was supposed to be the best fruits the various States and Provinces could produce, he did not have much difficulty in finding numerous specimens

that would have disqualified such fruits from being considered as fancy. What is needed, he thought, is a grade that will be practical, and not one that will bar out the producers of Ontario and Quebec from attempting to put on the market any considerable proportion of fancy fruit. He felt there should be some elasticity in the definition of fancy, and submitted the following amendment:

"No person shall sell, offer, expose, or have in his possession for sale any fruit packed in a closed package upon which package is marked any designation which represents such fruit as of fancy quality unless such fruit consist of well-grown specimens of one variety, sound, of uniformly large size and good color for the variety, of normal shape, and not less than 95 per cent. free from scab, wormholes, bruises and other defects, and properly packed."

Messrs. Brodie and Jack, from Quebec, agreed as to the difficulty of furnishing nothing but perfect fruit. Mr. Fisher also referred to how nearly impossible it is to obtain fruit that is free from blemishes, and referred to the difficulty his Department has experienced in gathering such fruit for foreign exhibitions. He claimed, amidst laughter, that the same difficulty had been found even in British Columbia. He suggested that the definition of fancy grade be very strict, but that some very slight latitude be allowed in a general clause of the Act, that would relate to the application of the Act as regards the definition of fancy.

Mr. Burrell: "The growers in British Columbia are in accord with Mr. Fisher's suggestion. We do not think that we have reached perfection, but we feel that if No. 1 is to have 10 per cent. of defective apples, it will not do to have anything less than perfect for fancy."

Mr. Graham suggested that the words "in boxes" should be added to Mr. Bunting's amendment. Mr. Jones objected to this suggestion and Mr. Brodie asked why he should be prevented from packing fancy apples in barrels if his customers wanted them packed that way. Mr. Hunt claimed such an addition would be a hardship on the growers in provinces where boxes are dear. Mr. Smith said he was strongly opposed to any clause that would enforce growers to pack their fancy fruit in boxes. Mr. McNeill said he had never seen a fancy apple go into a barrel and come out such, and were the inspectors to examine a barrel in which fancy apples are packed, they would have to condemn them, were they to find injured apples. Mr. Bunting consented to adding the words "in boxes" to his amendment, which was done. This ended the discussion Tuesday afternoon on this subject.

On Wednesday morning, when the discussion was resumed, Mr. Bunting stated that as it was of the utmost importance that the greatest harmony should prevail, he felt disposed to withdraw his amendment. He was strongly of the opinion that there should be a saving clause somewhere, and he thought that Mr. Fisher's suggestion that this might be included in a clause relating to the enforcement of the Act would be sufficient. He favored fancy fruit being packed in boxes, and claimed that as the trade is likely to move in this direction, it would not be a hardship. He then withdrew his amendment and the original resolution as presented by the resolutions committee was finally adopted with a slight amendment, so that it reads, "that fancy fruit shall consist of well-grown specimens of one variety, sound, of at least normal and uniform size and of good color for the variety, and of normal shape and properly packed."

NO. 1 APPLES

Another clause in the report of the resolutions committee recommended that a sub-section A shall be added to section 6 of the Fruits Marks Act, as follows: "No person shall sell, or offer, expose or have in his possession for sale, any fruit packed in a closed package upon which package is marked any designation which represents such fruit as of No. 1 quality, unless such fruit consist of well-grown specimens of one variety, sound, of not less than medium size and of good color for the variety, of normal shape and not less than ninety per cent. free from scab, worm-holes, bruises and other defects, and properly packed."

This was adopted practically without discussion. This is practically the same definition as has prevailed.

NO. 2 APPLES

A lively discussion took place over the definition of the No. 2 apple, as submitted by the resolutions committee and which read as follows: That a sub-section B be added to section 6, as follows: "No person shall sell, or offer, or have in his possession for sale, any fruit packed in a closed package upon which package is marked any designation which represents such fruit as of No. 2 quality, unless such fruit consist of specimens of medium size for the variety, free from worm-holes, except at the blossom end, and free from such other defects as cause material waste, and properly packed."

Mr. Lick pointed out that if any other words besides fancy, No. 1, No. 2, and No. 3, can be placed on packages, it might cause confusion.

Harold Jones, Maitland, Ont.
One of the Delegates to the Fruit Conference

Mr. Burrell replied that the committee had considered this point and had concluded that these grades would soon establish a position of their own. Were too many definitions placed in the Act, such restrictions would come dangerously near conflicting with private brands.

Mr. Fisher: "It is an important question that has been raised by Mr. Lick. The reason the clause in the Act allowing other marks to be put on boxes was inserted was because many growers have private brands for which they have created a demand. It would be a great hardship to them were they prevented from using these brands." Mr. Lick contended that it was more important that the interests of the majority of growers be protected than the interests of a few. Mr. Fisher pointed out that there is a clause in the Act stating that any marks placed on the packages must not be inconsistent with the standard mark, and that were this clause withdrawn, it would leave the door open for the insertion of private marks on the packages that would not be consistent with the grade of the fruit. Mr. Shepherd said he did not suppose there would be any objection to growers marking the names of their orchards on the packages, and was informed there would not be.

In discussing the definition of a No. 2 apple as submitted to the meeting, Mr. Fisher pointed out that there is a limit of 10 per cent. of defective fruit in the No. 1 grade, but no such limit was set in the definition of a No. 2. Mr. Graham claimed that the definition of a No. 2 apple required such apples to be of nearly as good quality as No. 1, and suggested that the limit of defective fruit in the No. 2 grade should be defined and that No. 3 apples should not be exported.

It was contended by Mr. Brodie, that if No. 3 apples could not be exported, it might be a hardship on poor people who cannot afford to buy the best fruit. In reply, Mr. Graham suggested that No. 3 apples might be shipped in some other kind of a package. The man who buys a poor apple once is not likely to buy any the next time and the trade is injured. Mr. Eaton thought that if No. 3 grade is ignored, it would be sufficient, as growers who desired could put their apples on the market as culls.

Mr. Manson: "In the past, we in Manitoba have been buying and paying No. 1 prices for cull apples. We are anxious that the definition of a No. 2 shall be made more definite. Under the definition we are considering, it will be possible for every apple to contain a worm. I move that not more than 20 per cent. shall be defective, and that even the defective fruit shall be well colored and of good quality."

Mr. Parker: "No. 1 and No. 2 grades are likely to be the standards for Nova Scotia for many years to come and I think it is well that a more definite standard should be set for No. 2."

Mr. E. D. Smith: "I agree that there should be a definition. As No. 1 and No. 2 apples have to be of uniform size, possibly a slightly smaller size, if perfect in other respects, might be allowed. The words 'permitting worm-holes,' in the definition are too comprehensive. I think that the clause that permits some defect from fungous diseases, while not permitting material waste, covers the question about as well as possible."

Mr. Parker: "We should keep up our ideal. Scab develops after the apples are packed and causes trouble. One trouble is that apples may be O.K. when packed, and become defective afterwards."

Mr. Manson: "When apples get to Winnipeg there is nothing small about the spot they contain."

The representative from Alberta claimed that the western buyers are not likely to buy apples that have any more than 20 per cent. of defective fruit. He claimed that some western dealers repack Ontario apples in British Columbia boxes. A general discussion followed, in which the fruit inspectors took part, after which Mr. Pettit moved an amendment to the definition of the No. 2 apple. It was adopted, practically unanimously, and makes the definition of a No. 2 apple read as follows:

"No. 2 shall consist of specimens of nearly medium size for the variety, and not less than 80 per cent. free from worm-holes, and free from such other defects that cause material waste, and properly packed."

ADULTERATION OF FOOD PRODUCTS

Following the discussion of the Fruit Marks Act, Tuesday afternoon, Mr. McGill, of the Inland Revenue Department, spoke of the adulteration of food products. He pointed out that the best known adulterants have come into use during the past 50 years, which accounts for the great increase that has taken place in the adulteration of food. He claimed that as man's recuperative power is limited, it is essential that his food shall be wholesome. Every man has the right to know what he is eating, and when food products are put up in packages, the packages should bear statements giving a printed analysis of their contents.

Reference was made to the various adulterants commonly used in the manufacture of jams and jellies, including glucose, and attention was drawn to the results of an investigation conducted by the Dept. during 1904-5, to find to what extent jams and jellies are adulterated. In 1904, 74 samples of jam and jelly were tested,

including 59 of jam and 15 of jelly. Glucose was found in 49 samples of jam and 6 of jelly; preservatives in 22 of jam and 5 of jelly, and dyes in 34 of jam and 4 of jelly. In 1905, out of 55 samples tested, 12 were genuine, 43 contained glucose, 11 preservatives, and 18 dyes.

Mr. McGill claimed that adulterants are not being used as extensively as formerly and pointed out that whereas glucose was used in 74 per cent. of the samples tested in 1904, they were used in only 66 per cent. in 1905. In 1904 the percentage of preservatives used was 36, and in 1905 only 15 per cent. The percentage of dyes used in 1904 was 51 per cent., and in 1905 30 per cent. The results of these investigations are contained in Bulletins 96 and 104. It was stated that jams and jellies are successfully made without preservatives. Where they are not used it is a guarantee that nothing but fresh fruits have been used.

A general discussion took place in which the view was freely expressed, that if nothing but pure fruits are used in the manufacture of jams and jellies it will increase their consumption and benefit the fruit industry.

Mr. McGill said that there is not a preservative known that will not injure the digestion in proportion to the quantity of it that is used. This ended the discussion, but on the following day the resolutions committee submitted the following resolution which was adopted:

"Resolved, that whereas a large percentage of the jams and jellies labelled 'Genuine' or 'Pure' that are offered for sale within the Dominion are adulterated;

"Whereas the low prices quoted on these articles secure for them a ready sale, to the disadvantage of the pure article;

"Whereas the interests of the manufacturers of pure goods, the fruit growers, and consumers are thereby impaired;

"Therefore, be it resolved, that this conference urgently requests the Federal Government to secure the immediate enforcement of the 'Pure Foods Act,' and that the Act be so amended as to compel the manufacturers of jams and jellies to print their formulas on their labels."

TUESDAY EVENING'S SESSION.

A public meeting was held Tuesday evening, at which the principal speakers were Hon. Sydney Fisher, who traced the work that has been done by the Dominion Experimental Farms, and what led up to the introduction and adoption of the Fruit Marks Act; Sir Frederick Borden, who dealt mainly with fruit conditions in his Province, Nova Scotia, where he has an orchard of 8,000 trees, and by Prof. Jas. W. Robertson, formerly Dominion Commissioner of Agriculture. All three speakers gave highly interesting addresses of a general nature.

EXHIBITS OF FRUIT ABROAD

The making of exhibits of fruit at foreign exhibitions was taken up at the Wednesday morning session, when the resolutions committee submitted the following resolution, which was finally adopted:

"Resolved, that the thanks of this conference be tendered to the Minister of Agriculture for aid received from his Department in past years in advertising our products in the United States and abroad, through displays at the various exhibitions that have been held from time to time. We would solicit further aid in continuance of this work, and would suggest that exhibits representing all of the provinces of the Dominion be held at the fall show of the Royal Horticultural Society, England, in 1906, and also at any other shows that may be held in the future, and that are considered of sufficient importance by the Minister of Agriculture.

"We would suggest in this connection, that in future the fruit for exhibition purposes, particularly apples, be gathered in the orchards during the picking season, properly wrapped, packed and placed in cold storage, instead of making selections during the winter months from stock in storage;

"And further, that part of each display be exhibited in the packages generally used in carrying such products to the markets."

In the discussion of the resolution, Mr. Ross suggested that all exhibits be distinctly Canadian and shown as such. Mr. Fisher replied that this has always been done as it has been found that it causes confusion in the minds of sightseers when they see exhibits from different parts of Canada competing one against the other. They do not seem to realize that the fruit from each province is all a part of the Dominion exhibit.

Mr. Palmer: "Our British Columbia growers were very successful with their exhibit at the Royal Show in England. The fruit was picked in the orchards of our best growers. The shipment was made in the usual way and upon its arrival in England it had to be stored for 3 or 4 weeks. It was found that, in order to make the best show possible, it was necessary to display the fruit both on plates and in packages. As we grow different kinds of fruit in the different provinces of Canada, it seems necessary

N. E. Jack, Chateauguay Basin, Que.
One of the Delegates to the Fruit Conference

that, if each section is to receive proper credit for its exhibits, they must be put up in such a way that sightseers will be able to distinguish what part of Canada they are from. Our growers do not fear competition from other parts of Canada, but we do fear that from the Western States, and we would like to have the people who see the exhibits know that we can grow as good fruit in British Columbia as they can in the Western States."

Father Burke: "How long should the fruit be picked before these exhibitions?"

Mr. Fisher: "About a month."

Mr. Fisher explained that the reason the fruit for these exhibitions has not been gathered in the orchards in the past, has been because it was not decided to make the exhibits until after the fruit had been picked. This made it necessary for the department to gather the exhibits the best way it could. He promised that attention would be paid to this point in future.

EXPERIMENT STATION WORK

The work being done by the Depts. of Agri., in the different provinces to encourage fruit production was dealt with at considerable length at the Wed. afternoon session. The subject was introduced by Mr. Linus Woolverton, of Grimsby, the Sec'y of the Ontario Fruit Expt. Stations. Mr. Woolverton stated that whereas Ont. had only 4 expt. stations in 1894, the number had increased to 13 in 1904. The expenditure connected with these stations amounts to about $3,600 a year. The results of the experiments at these stations show what varieties of fruit are best adapted for each part of the province, both for commercial and domestic purposes. The experimenters have formulated black lists for various districts to prevent planters from loss caused by the use of unsuitable varieties. The purchase of a central experimental fruit farm has been proposed where all new varieties can be tested. The speaker suggested the collation of information gained by the various provinces upon nomenclature of fruits which ought to be uniform for all parts of Canada. Apples essentially the same had different names in different provinces. Also as to identification of varieties, fruit growers would be glad of a central office to which they might appeal.

The work in N.S. was dealt with by Prof. F. C. Sears. Twenty-eight model orchards have been established, the stock for which is furnished by the Govt. The farmers who look after these orchards furnish 2 acres of land and agree to manage the orchards under the direction of the Dept. for 10 years. The idea has been to introduce new methods rather than new varieties, although each experimenter is given one or two new varieties to experiment with. At Wolfville, there is a plot of several acres that is devoted to experimental work. The work on the whole has been very successful.

Much the same work has been done in N.B., an account of which was given by Mr. Peters, the deputy minister of agri. The experiment stations are visited once or twice a year, that the Dept. may know that its directions are being carried out. In each model orchard, 10 varieties are tested. As a result of the work, one or two varieties that were tried at first have been discarded, including Ben Davis and Rhode Island Greening. The first suffered severely from the cold winters. The varieties that are giving the best results are the Fameuse, McIntosh, Duchess, Wealthy, Milwaukee, Baxter, North Star, Canada Baldwin, Wolf River, and Alexander. The results have been fairly satisfactory. A statement is published each year showing the number of trees set in each section and how they have succeeded. In sections where farmers said it was impossible to raise fruit successfully, these farmers having tried to raise fruit and failed, principally because they did not use the proper methods, these orchards have shown that fruit can be raised. This is likely to lead to a great increase in the amount of fruit produced in the province.

A statement of the work done in P.E.I. was made by Mr. J. C. Ready, sec'y of agri., who stated that in 1902, an experimental fruit orchard had been established which comprised 7½ acres. In the same year, 5 experiment stations were established in different sections of the province, which number has since been increased to 9. The original intention had been to give instruction in the orchards each year, but this has not been done. This year some varieties of apples from Minnesota are being tried, to see if they will suit the Island conditions.

For Quebec, a report was presented by Mr. J. C. Chapais, of St. Denis, who stated that experiments in fruit growing have been conducted during the past 10 years only. There are some 10 experiment stations which are doing splendid work in his section, where they used to think fruit could not be grown; they are raising 49 varieties of apples, 27 of plums and 12 of cherries. Each station receives $100 from the Dept. of Agri., and a report of its experiments is published by the Dept.

The following resolution was submitted and adopted unanimously: "Resolved, that it would be in the best interests of the fruit growers of the Dominion that the horticulturist of the Central Experimental Farm, or other competent officer, should be authorized to collect information on fruit topics, from the work of the vari-

ous provinces, whether done by the provincial fruit stations or otherwise; to advise with provincial organizations regarding such subjects as nomenclature of fruits; identification of varieties; origination and distribution of new varieties; history of varieties; and to publish a digest every year, giving number and title of the provincial reports in which details may be found."

COOPERATIVE WORK

An interesting account of the cooperative experimental work being done in Ont. was given by Prof. H. L. Hutt, of Guelph, who claimed that no matter how many experimental farms may be established, they cannot begin to cover the field. Even fruit experiment stations cannot fill the bill. By the experimental union in Ont., they have been trying to get growers all through the province to conduct experiments on their farms. There are now 2,000 experimenters growing apples. The Legislature has increased the grant and the work is likely to be extended.

Mr. Peart suggested that the varieties of fruit recommended by committees from each province should be sent to the secretary of the conference for publication in the report of the conference.

Mr. Glendenning warned the delegates that the northern part of Alberta will be heard from in the course of a few years as a fruit producing centre. The following resolution was then introduced and carried:

"That whereas there are many questions confronting the fruit growers to-day which need investigation and experimentation, and

"Whereas the fruit growers, as a rule, have not the time nor the means for such investigation; and

"Whereas many investigations, while of great value locally, are of little or no benefit to other sections of the Dominion owing to the differences of local conditions; and

"Whereas, this is not true of live stock and dairy investigation in which results are, to a great extent, applicable, not only to the section where they are carried on, but to all parts of the Dominion;

"Therefore, be it resolved that we respectfully petition the Honorable the Minister of Agriculture, that new sub-stations be established in the various provinces of the Dominion wherever local conditions and the importance of the fruit interests may warrant it, for experiments in pruning, spraying, irrigating, fertilizing, studying orchard pests, testing new varieties and investigating the many new questions that are constantly confronting the fruit grower."

THE TRANSPORTATION QUESTION

Much interest was manifested in the consideration of the transportation question, in connection with which the following resolutions were submitted:

"That the Railway Commission be requested to order:

"(a) That a time limit for the transportation of perishable fruits of not less than 12 miles per hour be put in force upon the railways of Canada, which time limit, if not maintained, shall place the onus of responsibility upon the carrying company if loss or damage is sustained thereby.

"(b) That when the railway companies fail to furnish suitable equipment for the transportation of fruit within 6 days after the time an order is placed with the local agent, a penalty be provided for each subsequent day's delay.

"(c) That icing stations be established at divisional points on railways engaged in the transportation of fruit and that cars fully iced be furnished when requested by the shipper.

"(d) That at stations where fruit is customarily loaded in car lots, shelter from sun and rain shall be provided;

"(e) That when requested shippers of perishable fruit shall be furnished by the local agent, with a daily report of the location of a car of fruit while in transit.

"(f) That a rate for transportation of apples be put in force that shall correspond with the present rate for flour—until such time as the railway companies furnish satisfactory equipment and service."

EXPRESS COMPANIES

"Resolved that the Dominion Government be memorialized to enact such legislation as will result in placing the express companies operating in this country under the control of the Railway Commission.

"That we desire to recognize the value and importance of the assistance rendered by the Dominion Dept. of Agri. in improving the conditions prevailing both with reference to the home and foreign trade, and would request a continuation of these efforts as far as possible.

"That copies of these resolutions be forwarded to the Dominion Govt., the Railway Commission, and the various railway and express companies interested."

The discussion of the first resolution was introduced by Mr. W. H. Bunting, who referred to the necessity for fruit growers being given proper transportation facilities for their fruit,

Elmer Lick, Oshawa, Ont.
One of the Delegates to the Fruit Conference

and who claimed that while the railways have been very unjust in some cases, he had always found them willing to remedy matters when they were approached in the right manner. He claimed that when a grower loads poor fruit he cannot expect the railway companies to land it at its destination in a better condition than when it was loaded. At the same time growers feel that there should be some safeguards surrounding the shipment of their fruit. The need for this is shown by the experiences of the growers in the U.S., many of whom have been held up at the mercy of the railway companies. He claimed that there was nothing in the resolutions that had not been embodied already in some form or other, in previous requests made to the government and to the railways. He claimed that the granting of these requests is of vital importance to the fruit industry, Efforts are being made to improve the methods of handling fruit, to secure new varieties, and to obtain better packages. These will all go for naught, if satisfactory transportation facilities are not provided.

Mr. Graham said that the members of the International Apple Shippers' Ass'n have ascertained through careful investigation that the 12 mile limit of speed asked for is not unreasonable, and that it can be easily maintained. Railway companies often sidetrack fruit, and thus the time for its shipment is much longer than has been the case with shipments that have been sent over the lines for experimental purposes. Many shipments of fruit, owing to unnecessary delay, reach the markets in a ruined condition and the shippers have no recourse against the companies. It also has been the experience of many shippers that large quantities of apples have been ruined by being exposed to the sun and rain at side stations, where suitable accommodation for them has not been provided. Hundreds of thousands of barrels of fruit have reached Great Britain in a damaged condition on this account.

Mr. Graham did not think that the time limit of six days required for the furnishing of cars was unreasonable. Last year the Ont. shippers often had to wait 2 and 3 times that length of time before they were able to secure the necessary cars. The result was that large quantities of apples were destroyed. Where shippers do not load cars or unload them, within 48 hours, they are charged so much a day by the railways, and it is only fair that the shippers should be able to apply the same principle to the companies. A number of railways are not equipped with icing stations. Several pass through sections where apples are shipped in car lots. The case of the Central Ont. Ry. was referred to. Not only should they have these stations in the fruit centres, but also at divisional points. It was claimed that more than half of the stations where apples are loaded in car lots, are without provisions for the protection of the fruit from rain and sun.

The making of daily reports by the companies as to the location of cars in transit was said to be something the growers have been asking for for years. On California lines, shippers and consignees both are furnished with these reports. Apple shippers receive less protection from the railways than the shippers of flour, as when flour is injured in transit, the shippers are able to present claims for damages. Apple shippers are unable to do this, although apples are much more perishable. This being the case, Mr. Graham did not think the rates charged on apples should exceed the rates charged on flour.

Mr. W. L. Smith, of Toronto, advocated the appointment of a committee to wait on the Dominion Railway Commission to urge these matters. He hoped that legislation will be secured at the present session of Parliament that will place the express companies under the control of the commission.

These addresses were heartily applauded, and a committee composed of Messrs. Bunting, Palmer, Graham, W. L. Smith, McKenzie, and Rev. Father Burke was appointed to wait on the railway commission to urge these requests.

Another committee composed of Messrs. Johnson, Shepherd, Eaton, Armstrong, Burrell and Rev. Father Burke was appointed to wait on the Government at the close of the conference to ask for the desired legislation regarding the express companies.

SALES ON COMMISSION

One of the most important discussions took place at a special session that was held Wednesday evening, when sales of fruit by commission was discussed. It was started by the introduction of the following resolution:

"That in the opinion of this convention any person soliciting or receiving consignments of fruit to be sold on commission, should be compelled to take out a license and furnish a bond satisfactory to the government, which license shall be liable to cancellation if at any time he neglects to make returns within 10 days after the date of sale, with a detailed statement showing the price, date of sale, and to whom sold."

Mr. M. Pettit said that an experience of 30 years had convinced him that there are dishonest dealers as well as dishonest growers, and that the growers frequently are defrauded of their just returns.

Mr. G. W. Hunt, who conducts a commission business in both Ottawa and Winnipeg, was called on and said that he was in sympathy with many features of the resolution. There are, he claimed, mushroom dealers, who do a great deal of damage to both growers and dealers. If licensing the dealers will control these men, the rest of the dealers will be much pleased. He could see no injustice to the dealers in their being expected to show their books. He was not acquainted with the methods of selling fruit in England, but believed that the dealers in Gt. Britain are a close cooperation, and that they frequently stack their goods. By stacking he meant making piles of fruit and placing the good fruit in the centre with the bad packages of fruit on the outside, and listing the whole pile as defective fruit. The men who do this give favorite buyers the tip, and they are able to buy in the whole lot at low prices. Such methods, he claimed, are impossible in Canada.

He was in favor of cooperative selling, and claimed that if every barrel of fruit was properly packed and consigned, it would sell for more than were it sold F.O.B. Were it possible to get the transportation that was asked for, goods might be consigned and sold for better prices by auction than F.O.B. The trouble with Ont. fruit is that it is not packed in uniform packages. He did not see any objection for a 10 day limit for report of a sale, as any honest dealer could give it, and it would get rid of the mushroom dealers."

Mr. Graham asked if the resolution was intended to include commission houses abroad, and was informed by Mr. Pettit that it was not. Mr. Brodie and Mr. Hunt said they would oppose it otherwise, as it was not fair that dealers from other countries should be allowed to compete on unequal terms with Canadian dealers.

They also should be required to give a guarantee, and they would be willing to do it, were they honest.

Hon. Mr. Fisher said he thought it was properly a provincial matter. Mr. Armstrong, of Alberta, favored the resolution, and thought copies should be sent the Provincial Govts. One speaker was afraid that the giving of a bond would not work out in the way it was hoped. A dishonest dealer would give a small bond, and would show it to growers as a proof that he was honest. In this way he would buy goods to a much greater value than the amount of his bond, and then skip out. It was finally decided to refer the resolution back to the resolutions committee. This was done, and the following day the following compromise resolution was submitted and adopted:

"Resolved, That in the opinion of this conference the question of controlling commission dealers should be left to the Provincial Govts., and it respectfully urges upon such Governments the necessity of placing such safeguards on the commission business as will protect the legitimate interests of those consigning fruit to the commission market."

OCEAN SHIPMENTS

Conditions surrounding the shipment of fruit to Gt. Britain were dealt with at the Thurs. mng. session in two resolutions that read as follows:

"Resolved that (a) All subsidized lines should have good ships at not less than 12 knots speed, thoroughly ventilated holds for fruit, apart and free from heat and taint of other cargo.

"(b) Close supervision of the stevedores to ensure proper stowage and careful handling in both loading and discharging.

"(c) Just and reasonable conditions in all bills of lading so that in case of loss through breakage or non-delivery of goods the shipper may recover easily such loss from the ship.

"(d) That the Government should hold back part of such subsidy in order to indemnify shippers that may have suffered loss through the failure of the steamship to sail within a reasonable time after the advertised date of sailing."

MARITIME SHIPMENTS

The second resolution read:

"Resolved, that whereas the export of fruit from the Maritime provinces by sea is not satisfactory on account of the slow service provided by the lines now sailing from Halifax to Great Britain, and

"Whereas, these lines are subsidized by the Federal Government for amounts that should give a satisfactory service:

"Therefore, be it resolved that we ask the Government to combine the two subsidies now paid to two lines in a subsidy to any one line that will give a 12 knot weekly service during the fruit shipping season."

Discussion was lead by Mr. Ruddick, who showed what oversight is given by the Dept. to fruit shipments. He submitted copies of inspectors' reports that showed that the inspectors have to report the date of inspection, the temperature of the fruit on the wharf, condition of the apples, name of the shipper, etc This is done at Montreal and also in Gt. Britain after the receipt of the fruit. A sample report of a shipment made last Oct. by the steamship Bavarian, showed that she sailed Oct. 26, contained 28,000 bbls. of apples, that the temperature in the shed on the wharf had been 60 to 65 deg., that the temperature of the apples in the barrels before loading had been 70 to 80 deg. Of these apples 105 lots had been inspected, of which 20 per cent. had been found to be in bad condition. Many of the apples were scalded, showed scab and were otherwise defective. The temperature in the hold of the ship during the first 3 days of the voyage was 62 deg., and gradually dropped to 51 deg. after the vessel had been out 7 days. At the end of the voyage the temperature was 57 deg. In the cold storage dept. the apples on loading, showed a temperature of 66 deg., which dropped to 40 deg. by the time the vessel reached Gt. Britain.

Mr Ruddick was asked if reports were taken regarding the shipments from N.S. points, and was told that reports were received but that thermograph records were not kept. Mr. Ruddick was asked if the Dept. has any control of the temperature maintained in the vessels, and replied that it has not, but that the records of the temperatures on the vessels are filed on the Board of Trade at Montreal, where the shippers are able to see them. Where improper temperatures have been maintained the companies find it difficult to obtain further shipments.

"Mr. Fisher was asked by Mr. Eaton if the Govt. intends to have thermographs put in every vessel, and was told that it does. Mr. Eaton asked if figures could be obtained showing the comparative temperatures on the deck and in the hold. This led to a long discussion, the result of which was that the Govt. claimed that efforts on their part had shown that a satisfactory record of temperatures on deck cannot be secured. Mr. E. D. Smith wanted to know what guarantee the Govt. has that the cold storage machinery on the vessels is not stopped during the course of the voyage. In reply Mr. Fisher stated that the thermograph records would show any variation in the temperature. In a discussion it was decided that 12 knots an hour would be a satisfactory rate of speed where low temperatures are maintained on the vessels. The resolutions were then carried.

ICED CARS FOR FRUIT

Mr. Graham submitted a resolution which claimed that as the Govt. furnishes ice for a certain number of cars, used for the export of dairy produce, it should do the same for the fruit growers. He had frequently been told, when he wanted to use these ice cars for his fruit, that he could not have them as they were reserved for dairy produce. Mr. Parker rather mischievously said, that as the dairy commissioner has charge of the fruit division, he should be able to remedy this matter.

A little further discussion resulted in Mr. Fisher promising to extend the same privileges in regard to iced cars to shippers of fruit for export, as are given to shippers of dairy produce. This announcement was heartily applauded. Mr E. D. Smith asked if this would include apples and was told that it would. Mr. Brandrith wanted to know if B.C. growers cannot obtain the same privileges for the inter-provincial trade, as they export but little fruit. Mr. Fisher replied, with a smile, that he would consider the matter.

MARKS ON PACKAGES

The following resolution caused a lively discussion: "Resolved, that all the marks required by the provisions of section 4 of the Fruit Marks Act shall be placed on both ends of closed packages." Mr. Starr said that shippers place their mark on one and consignees on the other end. Were the shippers to be forced to place their marks on both ends it would cause confusion. Fruit Inspector Smith said he was in favor of such a resolution as he found that some shippers were not too scrupulous about putting their marks on the end. They would place part on the end and part on the side, making it difficult to find it. When part of the package was removed, the marks disappeared. The resolution finally carried, the word "either" being substituted for the word "both."

LEGAL APPLE BOX

The following resolution also was carried: "Resolved that the Act legalizing the apple box be so amended as to make the Act apply to internal as well as export trade, but to closed packages only." This was done at the request of the B.C. growers, who pointed out that while the growers in the other provinces conduct an export trade largely, theirs is an inter-provincial trade, and that it is just as important there should be uniformity in boxes for the inter-provincial trade as for the export trade. Mr. Fisher said that such a proposal had been made when the discussion took place in the House of Commons, regarding the standard box, but it had not been adopted owing to the fact that it might interfere with growers who sell apples on their local markets in all sorts of boxes. It was pointed out that as the resolution referred to a closed package only, it would not interfere with this practice.

STANDARD APPLE BARREL

It looked at first as though it would be difficult to reach an agreement in regard to a standard apple barrel, but it was finally decided, practically unanimously, to make the 28 in. barrel the standard for Canada. This action was taken by the adoption of the following resolution: "Whereas a large proportion of the fruits of the Dominion are bought and sold by the barrel, and whereas the size of the barrel varies in the different provinces, leading to confusion in price quotations; therefore be it resolved, that the present barrel, described in Section 4, Chapter 26, Statutes 1901, be made the standard uniform barrel in Canada for shipment of fruit and that no other size of closed barrel be allowed after two years.

"And further resolved, that this conference recommend the Department of Agriculture to strictly enforce the provisions of the Act relating to the sale of certain commodities (sec. 4 and 5) relating to the size of and uniformity of packages."

The description of the barrel as contained in the Act is as follows: "All apples packed in Canada for export for sale by the barrel in closed barrels shall be packed in good and strong barrels of seasoned wood having dimensions not less than the following, namely: 26¼ in. between the heads, inside measure, and a head diameter of 17 in., and a middle diameter of 18½ ins., representing as nearly as possible 96 quarts."

A lively discussion took place regarding this matter. Sample barrels were brought in and used to illustrate the points raised. Telegrams from N.S. were read protesting against the 28 in. barrel being made the standard, although the members of the N.S. delegation were unitedly in favor of such action. Mr. Innis, of Chatham, representing the largest manufacturers of apple barrels in Canada, spoke at considerable length. He claimed that the manufacturers can supply 28 in. staves more easily than 30 in. and that the flour trade is changing to the use of 28 in. barrel. He also claimed that the 28 in. barrel is almost universally used in the U.S. Mr. Jack favored the smaller barrel because it more nearly represents the contents of 3 boxes. The Ont. representatives admitted that many growers in Ont. are using a 30 in. bbl., for the sake of uniformity, were willing to agree with the other delegations in favor of a standard bbl. of 28 in. Mr. Johnson and Mr. Ross said that the 28 in. bbl. is used almost exclusively in Southern Ont. Messrs. E. D. Smith and M. S. Schell, both members of Parliament, objected to growers being prevented from using the larger bbl. if they desired, but on a vote being taken on the resolution, it was carried practically unanmously, only three voting against it.

TARIFF ON SUGAR

A discussion took plaee on a resolution in regard to a change in the tariff on sugar, but the resolution was finally withdrawn, when it was found it would likely create a controversy and take up considerable time. Mr. R. Anderson, of Montreal, spoke at some length on this subjeet and claimed that the sugar manufacturers in Canada, owing to the tariff protection they receive, make a profit of about $2,000,000 a year over and above a legitimate interest of 7½ per cent.

FRUIT BASKETS

A resolution was introduced regarding the size of fruit baskets. The conference was asked to adopt the same sizes as were recently recommended by the growers of the Niagara district, who are the most interested in the matter. This resolution, owing to the lack of time for thorough discussion, was left on the table.

THE GERMAN APPLE TRADE

Mr. Chapin, of Toronto, read a paper showing the importance of the apple export trade that has developed during the past few years with Germany, and which is seriously threatened by the tariff on apples that will shortly go into force in Germany and which will practically stop the importation of Canadian apples. The delegates felt that the matter was an important one and were in favor of everything possible being done to reaeh an agreement with the German Govt. Mr. Fisher explained what has led up to the present difficulty and claimed that the Canadian Govt. is willing to consult on this matter with the German Govt. as soon as the latter shows a willingness to do so.

FUTURE CONFERENCES

A resolution recommending the establishment of a Dominion Pomological Society was adopted, but was later withdrawn when Hon. Mr. Fisher promised to arrange for future conferences regularly, every two or three years. This promise was received with great enthusiasm.

DOMINION FRUIT DIVISION

The only regrettable feature of the conference occurred in connection with the matter of the Fruit Division being under the control of the Dominion Dairy Commissioner. It was caused by what many of those present looked on as a little sharp practice on the part of Hon. Sydney Fisher, who was acting as chairman when this matter was raised.

Ever since the fruit division was placed under the charge of the dairy commissioner the fruit growers of Canada have been dissatisfied, and on frequent occasions have made their dissatisfaction known. In spite of explanations that have been given by Mr. Fisher for his action, resolutions condemning the arrangement have been passed by several of the provincial fruit growers' associations as well as by numerous local associations.

Hardly had the convention convened before this question was raised privately among the delegates. It was known that Hon. Mr. Fisher was opposed to making any change, but the growers felt that the matter was of such importance that they should place themselves on record. They pointed out that as this is not a question of the officials now concerned, but one of principle, and that as it is felt the importance of the fruit industry will never be fully recognized until it is accorded a chief of its own, who will be directly responsible to the Minister of Agriculture only, their views on this matter should be made known at the conference.

Owing to the many other subjects of importance that had to be considered this matter was not brought up until near the close of the final session, when a resolution was submitted, among several others, by the resolutions committee This resolution read as follows:

"Resolved that in the opinion of this conference the time has arrived when the horticultural interests of the Dominion should be represented by a separate division under a chief directly responsible to the Minister of Agriculture."

The members of the resolutions committee that brought in this resolution represented all the provinces. It had been agreed quietly among the delegates, that should any discussion on the resolution arise, speakers from different provinces should get up and make the views of their growers known.

Before reading this, which was among several other resolutions, Hon. Mr. Fisher announced that, to save time, those resolutions that could be passed without discussion, would be passed, and that any which required discussion would be set to one side and debated later. Several resolutions were passed, and one or two were set to one side for further consideration before this resolution was reached. On reading it to the convention, Hon. Mr. Fisher seemed a little surprised, and immediately set it to one side, among those to be taken up later, with the remark that he had something to say on the subject. These other resolutions were taken up in order and settled, but Mr. Fisher apparently overlooked this one, as instead of reading it he proceeded to bring the convention to a close, by thanking the delegates for their attendance and congratulating them on the success of the conference. This action on his part caused general surprise among the delegates, who had been waiting for this resolution with considerable interest.

Some thought that Mr. Fisher had overlooked the resolution unintentionally. It was then after 5 o'clock on the last day of the convention and a hasty debate between some of those who had agreed to support the resolution when it was submitted, led to its being decided to let the matter drop, the belief being that the resolution, as submitted by the resolutions committee, was sufficient to make their views known to the Dept.

The unfortunate part of the incident lies in the fact that subsequent developments give strong reason to believe that the resolution was intentionally overlooked by Mr. Fisher, with the object of preventing the growers from having an opportunity to make their views known. This is shown by the fact that when Mr. Fisher handed this resolution to the official stenographer, and to the reporters present, it bore the words at the bottom, "laid on the table, S.F." The resolution was handed to the reporters just as the conference finally closed, and thus must have been noticed by Mr. Fisher. When he wrote on it, that it had been laid on the table, he wrote what was not the case, as the matter had not been discussed by the conference. If the resolution is published in the official report with these words attached, it will give the impression that the matter had been discussed by the conference, and was not considered of sufficient importance to be finally disposed of, and that it had been left on the table with their consent. This was not the case. Those present will be surprised, therefore, if the resolution is published in this form. In the meantime it can be stated that probably every delegate present was prepared to stand by that resolution, and that they regret that the matter was disposed of in the manner in which it was. It gave the impression that Mr. Fisher felt the weakness of his position and that he did not like the idea of being called on to defend it before such a representative gathering of growers.

OTHER RESOLUTIONS

Near the close of the conference, and at odd moments during the meetings, several resolutions of minor importance were adopted. These included the following:

"Resolved that this conference recognizes the efforts that have been made by the Government in the direction of fighting and controlling the various insect and fungous pests of the fruit industry, and trusts that such efforts will not be relaxed."

NURSERY STOCK

"Further resolved that inasmuch as serious losses have been sustained by fruit growers by reason of the sale of nursery stock of inferior quality, and untrue to name, this conference urges the various provincial governments to enact such legislation as will thoroughly safeguard the interests of the purchaser of such stock."

DEVELOPING MARKETS

"Resolved that this conference is in sympathy with the aims of the following resolution passed by the Ontario Fruit Growers' Association:

"That we recommend a vigorous campaign in conjunction with the Dominion Government to exploit the apple markets of Europe, Great Britain and South Africa.

"To appoint agents whose sole duties will be to open up markets in these countries. To ask the Government to continue to improve the conditions of cold storage for tender fruits, so that the shipper may have the best facilities for reaching the markets of the world."

FRUIT MARKS PENALTIES

"Resolved, That the Dominion Fruit Growers' Conference recommend that the Fruit Marks Act be amended so as to increase the penalties for third and subsequent violations of the said Fruit Marks Act."

DOMINION FRUITS

"Resolved that this conference, whilst freely acknowledging the great good done to horticulture by the publication of valuable bulletins on the various phases of the science, does respectfully request the extension of the work to some permanent treatise on the fruits of Canada with colored plates permitting of the easy identification of varieties and containing such information in regard to them as may be generally useful."

DIRECT SALES OF FRUIT

"That in the opinion of this conference the proper method of selling fruit is by direct sale individually or cooperatively, and that this conference urges upon the governments and upon the growers that a better system of pruning, spraying, grading and packing be adopted that will enable our fruits to take a higher stand in the markets of the world.

FRUIT INSPECTORS' WORK

"Resolved that this conference does hereby recommend to the Dept. of Agri. the continu-

ance of the services of fruit inspectors in those provinces where such services have been so effective on account of the nascent nature of the fruit interest therein; the inspectors being used for this purpose whenever not engaged in the actual work of inspection."

The conference was brought to a close by the adoption of resolutions thanking Hon. Mr. Fisher for the able manner in which he had presided at the various sessions, and with hearty cheers for Canada, for the fruit industry of the Dominion and for Hon. Mr. Fisher.

Practical Pointers from Practical Persons

Picked up and Penned by A. B. Cutting, B.S.A., Special Representative of The Horticulturist who is visiting the homes of fruit and vegetable growers in the Niagara Peninsula

IT would seem that there is need of more accurate information regarding the preparation and relative quantities of ingredients of the lime-sulphur wash. So many different proportions are advised by different men, and so many different ways are adopted for mixing these proportions that the new beginner, and sometimes the experienced grower, is at a loss to know the best method of procedure. Two questions should be settled, if possible. First, What is the best definite formula for the mixture? and second, Is boiling necessary or is it not? There are some difficulties in the way of answering these questions; yet they are not sufficiently formidable to warrant the many different opinions that exist among fruit growers.

In 1905 the Dept. of Agri. conducted valuable experiments in the use of this mixture. During the present session of the Legislative Assembly, the Hon. Nelson Monteith stated that a continuation of the work is under consideration. In the interests of the fruit industry, the work not only should be continued but also it should be extended to cover and to settle, as far as practicable, all points at present debatable.

THE LIME-SULPHUR WASH.

Whether lime and sulphur should be boiled by steam or not is the most disputed point among the users of this popular mixture for San José scale. Many growers believe that steam must be used for accurate results. On the other hand, there are many who boil simply by the energy of the lime in slaking, and with results equally as satisfactory. Among the latter is Mr. J. H. Broderick, of St. Catharines, who claims that the mixture can be boiled without an engine if double the usual amount is prepared at a time. A double quantity of lime is necessary to get a greater amount of heat generated, which is necessary to produce the desired result. Mr. Broderick's method of procedure, step by step, as explained in his own words, is as follows:

"Take a 40-gal. barrel and in it place a hoe with a strong handle, then put in 40 lbs. of best lime (Beachville). In a large pail put 30 lbs. of sulphur, and add enough water to make a paste. Apply then to the lime in the barrel 15 gals. of boiling hot water—and now is the time for the operator to hustle if he ever hustled in his life; *immediately* after adding the water *dump in the sulphur*. Over the top of the barrel place a heavy canvas to keep the material from splashing and boiling over, leaving a small vent around the hoe handle for the escape of steam. Keep this cover on the barrel for about 15 minutes, when the violent boiling probably will be stopped, then add about 15 gals. more water. Stir slowly by moving hoe around bottom of barrel—do not raise hoe to let the air in. Allow the mixture to boil about 40 minutes, then add enough warm water to fill the barrel. The mixture then should be strained into another barrel; to do this easily, it is necessary to stir often and well. After straining there will be about 35 gals. of material; this should be diluted sufficiently to make 80 gals. It is then ready for use."

WOULD AMEND FRUIT PACKAGE LAW.

According to the Canadian Fruit Package Law, practically any basket besides the four specified sizes may be used for shipping fruit, so long as it is stamped plainly on the side in large black letters with the word "Quart" in full, preceded with the minimum number of quarts the basket will hold when level full. This regulation is very unsatisfactory, as it leads to confusion and, sometimes, indirectly, to dishonest practices. A standard size and no other should be used. A basket stamped in the manner required by law has no meaning to the ordinary consumer, and even to many retail dealers. The fact that a basket is stamped "9 Quarts" or "10 Quarts," as the case may be, makes little or no difference in the selling price of the basket, for usually these small sizes bring as much money in the market as the regulation 11 quart size. Mr. E. D. Smith, M.P., Winona, thinks that this clause should be done away with, or at least it should be changed so as to compel shippers to stamp undersized baskets with the words "1 Quart Short" or "2 Quarts Short," as the case might be. Both suggestions are good. The adoption of either would mean much to further the cause of uniformity and honesty in our fruit packages and packing.

CO-OPERATION MEANS SUCCESS.

That the development and success of our export commerce in fruits depends on the formation of co-operative organizations amongst growers is the opinion of Mr. P. J. Carey, Dominion Fruit Inspector, Toronto. The co-operative plan, with central packing houses, is the only plan for satisfactory results. Through co-operation, all our fruit may be placed on the market at its very best, and it follows that we will get the very best out of the fruit. Co-operation will give us a better pack—more uniform and more honest. It will do away with the picking of immature fruit. Large quantities of fruit are picked too soon; on the other hand, thousands of barrels of apples are left on the trees too long—this partly accounts for the large percentage of windfalls in some orchards. Co-operative organizations ship only the best grade, the rest is evaporated—a system that commands confidence in foreign markets; individual buyers ship anything and everything, windfalls and all. This destroys confidence, and eventually will cripple our fruit industry. By all means, co-operate!

UNIFORM QUOTATIONS.

At a meeting of fruit growers held in Beamsville last month, Mr. J. A. Livingston, editor of *The Independent*, Grimsby, made a strong plea for uniform quotations. Different quotations going out from the same locality on the same day, mean depressions in the market and ruination to the fruit business. Un-uniform quotations keep the markets in an unhealthy state. They injure the grower, the dealer, and everybody connected with the industry. All kinds and grades of fruit should be quoted at the price fixed by the law of supply and demand for that particular kind and grade on a par ticular day. There should be no cut-throat methods in the fruit trade.

PRUNING SYSTEMS FOR SMALL AREAS.

For small areas, and particularly for the city man's fruit garden, intensive methods of culture and care must be employed. Among other methods of pruning trees for small lots is the fan system. By this method, the trees are kept low and the branches are trained to grow in two opposite directions, all others at right angles being cut off. The system admits of more trees on a given area, and at the same time it allows inter-cropping one way between the trees. It also tends to produce better quality and color in the fruit, as the sun has a better chance to do its work. This system is being tried by Mr. H. F. Baker, and Mr. J. W. Brennan, of Grimsby, and by others.

Mr. Baker is experimenting also with a modification of the system, as he is growing peaches trained fan-shaped on a wire trellis. The branches are tied in position to the wires. The trees are pruned so as to keep the new wood well back and near the trunk. This system is akin to that used by some French and Italian gardeners in certain parts of their native lands; it may be valuable for its purpose in our own.

BLACKBERRIES FOR PROFIT.

A modification of the hedge row system of growing blackberries is adopted in the large plantation of Mr. Newton Cossitt, Belvedere Fruit Farm, Grimsby. Instead of growing the canes close together and in wide rows, Mr. Cossitt thins them out to at least 8 in. apart and keeps the canes in line as far as practicable. The main idea of the system is to have a thin narrow row. Many advantages are claimed for the system by Mr. Cossitt: I. Ease in cultivating and hoeing around the plants. 2. It facilitates the work of picking and marketing. 3. Better quality of berries is secured, due to energy of root system going to develop one cane instead of half a dozen. 4. No loss through immaturity in centre of rows, such as sometimes occurs when rows are wide. 5. Narrow rows can be grown closer together, more plants may be grown to the acre and, as a consequence, a greater yield is secured.

THE LONGHURST PEACH.

In most peach orchards of the Niagara peninsula the Longhurst is grown in only small quantities or it is discarded altogether. Many growers object to this variety, claiming that it is not profitable, that it requires too much care and manure, and that the fruit is too "fuzzy" and unattractive. On the other hand, there are growers who contend that usually the Longhurst is not given a fair trial.

Mr. J. W. Brennan, Grimsby, said that "the Longhurst is one of the leading commercial varieties grown, when properly taken care of. It must be grown on sandy soil, well fertilized and built up with cover crops. The tree requires regular and systematic pruning; and, above all, the fruit must be well thinned."

The ideas of Mr. W. D. Culp, Beamsville, another champion of the Longhurst, agree with those of Mr. Brennan, except that Mr. Culp has found better results from trees grown on soil somewhat heavier than sand. Mr. Culp said also: "The Longhurst yields annually, but is inclined to overbear; to get size and quality, it should be well pruned and the fruit thinned every year. The 'fuzz' objected to by most growers disappears as size is developed—a large sized Longhurst is comparatively clean in this respect."

PLANTING SWEET CHERRIES.

"Most growers use two-year old stock when planting sweet cherries," said Mr. W. H. Brand, Jordan Station, "but, for an even stand, it is better to plant one-year old trees. On trees two years old, the fine root fibres are too far

away from the crown, and when dug most of them are cut off; on one-year old trees the fibrous roots are close up and can be saved. The buds on tree trunks of two years' growth have been developed the previous season, and also the trees are too high; and as a consequence, there is no protection against sun scald and undue evaporation. The trunks of two-year old trees are large and too much of a tax on the bruised roots—this can be remedied only in part by pruning back. And furthermore, one-year old trees can be headed at any height desired while those of twice the age have heads already formed in the nursery."

MELONS FOR MARKET.

Among the many different crops grown by fruit and vegetable men in the vicinity of Hamilton are melons, and musk melons in particular. "It is not well for growers to depend upon one kind of crop alone," said Mr. Walter Horne, of Aldershot; "it is always better to grow a general assortment of marketable produce rather than to specialize." Although this item of general advice was voiced by Mr. Horne, yet he has had special success in growing musk melons for market. In varieties, he grows Early Citron, Rocky Ford and Paul Rose. Early in May he starts the seed in the hotbed, sowing about five seeds on an inverted sod, say a cube four inches each way. About a month later, if the weather is settled and no danger of frost, these are set out in the field. The early sorts are planted five feet apart each way, and the late six feet. When thoroughly hardened to the open, they are thinned out to two or three vines in a hill. Cultivate often and well.

GROWING CELERY.

The well-known market gardeners of St. Catharines, J. Dunlop & Son, briefly outlined to your representative their method of growing celery. In March the seed is sown in hotbeds, in alternate rows with tomatoes. During the latter part of April, the plants are transplanted to a cold frame; and about the first of June, to the field. Mr. Dunlop grows his celery on the level, rows 3 ft. apart with plants 6 in. apart in the rows. He cultivates the early varieties till the middle of July, then puts 10 in. boards on both sides of the rows. These boards bleach the celery without the necessity and trouble of earthing up. These early sorts, ready for market about Aug. 1, are White Plume and Paris Golden Yellow.

The late varieties, such as Hartnell's Perfection, are cultivated till later in the season, and in Sept. a furrow is plowed up on both sides to keep the stalks together. When frost comes, the celery is dug and put in trenches 18 in. in width and packed solidly. Over this trench is put V-shaped boards, and on the approach of heavy frosts the whole is covered with manure. The late sorts are ready for market at Christmas. They can be kept in the trenches, if undisturbed, all winter. When trenches are opened, however, the celery must be removed and stored inside

CHALK'S JEWEL TOMATO.

Mr. J. H. Broderick, of St. Catharines, grows Chalk's Early Jewel tomato, and thinks it is the best general purpose tomato for his locality. Although its name implies earliness, it cannot be classed among the early varieties. It is about a week earlier than Ignotum. "It is well liked for canning," said Mr. Broderick, "being round, smooth, solid in flesh and of uniformly medium size. It is very productive; last season I picked and shipped 1,820 11 qt. baskets from 1,900 plants. Growers should buy the seed from a firm that makes a specialty of this variety."

Gravensteins in P.E.I.

In Rev. Father Burke's Prince Edward Island notes that appeared in the January issue of THE HORTICULTURIST, the writer was made to say that in the past the Blenheim apple was known as Gravenstein.

In calling attention to this statement Father Burke explains in a recent letter that the Blenheim is a most successful apple in Nova Scotia, much more so than the Gravenstein, which was at one time considered to be her specialty, but whose day now seems to be past. "We think that we are growing Gravensteins here now better than they can be grown anywhere else," concluded the writer.

Who They Are

Key to the group photograph of the delegates at the Dominion Fruit Conference published on page 81.

1 Walter Dempsey, Trenton, Ont.
2 W. T. Macoun, Hort. Exper. Farm, Ottawa.
3 W. J. Farley, Trenton, Ont.
4 Norman Jack, Chateauguay Basin, Que.
5 W. D. Albright, London, Ont.
6 R. T. Goodfellow, Prince Albert, Sask.
7 Geo. Vroom, Dom. Fruit Inspector, Middleton, N.S.
8 Robt. Brodie, Westmount, Que.
9 Ralph Eaton, Kentville, N.S.
10 Saxby Blair, Macdonald College, St. Annes, Que.
11 Elmer Lick, Oshawa, Ont.
12 John F. Scriver, Dom. Fruit Inspector, Hemmingford, Que.
13 A. W. Peart, Burlington, Ont.
14 G. Renaud, La Trappe, Que.
15 G. C. Chapin, Toronto, Ont.
16 J. C. Chapais, St. Denis, Que.
17 R. J. Cochrane, Colborne, Ont.
18 J. J. Philp, Dom. Fruit Inspector, Winnipeg, Man.
19 Prof. F. C. Sears, Truro, N.S.
20 R. W. Starr, Wolfville, N.S.
21 B. W. Chipman, Comr. of Agri., Halifax, N.S.
22 D. Johnson, Forest, Ont.
23 W. J. Brandrith, Ladner, B.C.
24 Prof. Hutt, Guelph, Ont.
25 Dr. Wood, St. John, Que.
26 John Fisk, Abbottsford, Que.
27 David S. Manson, Winnipeg, Man.
28 Jas. Grant, Victoria, B.C.
29 J. Innis, Chatham, Ont.
30 R. J. Hamilton, Edmonton, Alta.
31 G. C. Miller, Middleton, N.S.
32 J. A. Ruddick, Dairy Comr., Ottawa, Ont.
33 J. C. Metcalfe, Hammond, B.C.
34 J. S. Scarf, Woodstock, Ont.
35 Father A. E. Burke, Alberton, P.E.I.
36 W. H. Bunting, St. Catharines, Ont.
37 W. D. A. Ross, Chatham, Ont.
38 Alex. McNeill, Chief Fruit Division, Ottawa, Ont.
39 R. W. Shepherd, Como, Que.
40 R. M. Palmer, Victoria, B.C.
41 Alfred Gifford, Dom. Fruit Inspector, Meaford, Ont.
42 Martin Burrell, Grand Forks, B.C.
43 E. H. Wartman, Dom. Fruit Inspector, Montreal, Que.
44 P. J. Carey, Dom. Fruit Inspector, Toronto, Ont.
45 W. L. Smith, Toronto, Ont.
46 I. W. Stephenson, Sheffield, N.B.
47 A. E. Sherrington, Walkerton, Ont.
48 Robt. Hamilton, Grenville, Que.
49 Murray Pettitt, Winona, Ont.
51 Maxwell Smith, Dom. Fruit Inspector, Vancouver, B.C.
52 F. L. Dery, Dom. Fruit Inspector, Montreal, Que.
53 P. W. Hodgetts, Toronto, Ont.
54 J. W. Ford, Oakville, Ont.
55 L. H. Newman, Ottawa, Ont,
56 A. E. Dewar, Charlottetown, P.E.I.
57 L. Woolverton, Grimsby, Ont.
58 Prof. Jas. W. Robertson, St. Annes, Que.
59 A. S. Chapin, Toronto, Ont.
60 R. J. Graham, Belleville, Ont.
61 E. D. Smith, M.P., Winona, Ont.
62 H. H. Miller, Ottawa, Ont.
63 J. C. Ready, Charlottetown P.E.I.

A Veteran's Advice on Spraying

Mr. W. H. Bunting, of St. Catharines, Ont. writes, Feb. 20th, 1906: "Permit me to say that to the best of my judgment I believe 'SCALECIDE' will be a valuable agent to be used in controlling San Jose Scale. While I am not prepared to unqualifiedly endorse it until further experimental work has been carried on, I have no hesitation in recommending it to fruit growers, as worthy of a fair trial, wherever scale is found to exist."

Full particulars, prices and testimonials from the most eminent specialists and foremost fruit growers of America, sent on application to the Spramotor Co., London, Ont., or B. G. Pratt Co., 11 Broadway, New York City

EXTENSIVE SALES. Messrs. Stone & Wellington Nurseries of Toronto, say that this year will be one of the best in the history of their business. Although the season has not yet closed, they have sold up to date over 300,000 fruit trees, composed of apples, pears, cherries, plums, peaches, etc.; over 360,000 small fruits, including grape vines, raspberries, currants, gooseberries, and blackberry bushes; 130,000 shrubs, ornamentals, and hedgings; 70,000 evergreens, 25,000 roses and 10,000 herbaceous plants. They report that the largest demand for commercial fruits is still for such standard varieties as the Baldwin and Ben Davis apple, Early Richmond and Montmorency cherries, Abundance, Red June and Lombard plums. The demand for new varieties such as the Maynard and Climax plums is largely increased. Small fruits also are in very large demand, due in a great measure to the establishment of canning factories.

GREAT IMPROVEMENTS. The Little Giant Sprayer Co. have made many improvements in their machine, notably in the Ys and elbows, to remove all diminution of pressure. All right angles have been done away with, and a surprise is promised their patrons in the new clusters, as well as in the Ys. Patent nozzle tips will be furnished at 40 cents each. Formerly they cost 75 cents. The manager, Mr. Palm, informs THE HORTICULTURIST that the sales have been large and the factory kept busy. The demand is said to have increased extensively, and those who wish to have the machine for the first spraying are advised to place their order in advance, so that they may not be disappointed in delivery.

A HANDSOME CATALOGUE. Realizing that the quickest way to increase business is to increase the number of people interested in cultivating flowers, the Webster Floral Company, of Hamilton, have issued an excellent illustrated catalogue in which the various lines of plants and flowers are fully described. Handsome premiums are offered with every $5.00 order. Directions for handling and planting are given.

FINE PLYMOUTH ROCKS. The general plan of mating and selection practised by the Woodview Poultry Yards, of London, Ont., ensures satisfaction to those who purchase settings from that source. A neat booklet containing a description of birds in each of the pens has been printed. Matings are made to produce general utility birds, exhibition males, exhibition females, etc.

Plans for a new horticultural building at the Toronto exhibition have been submitted. It will be in the form of a cross with a dome centre 50 ft. in diameter. The wings will be 220 ft. from extremity to extremity. The four will accomodate respectively fruit, flowers, vegetables and honey. The cost will be about $70,000. It is expected to have everything in readiness for the show of 1907.

POULTRY DEPT.

Conducted by
S. Short, Ottawa

In accordance with a promise made in the last issue of THE HORTICULTURIST I propose to deal in this article with different methods of hatching. It is generally conceded by poultry experts that if less than 100 chickens are to be hatched they can be handled nicely by using hens; if more than 100 are desired the incubator is much more convenient and more easily managed, and in less time.

I can not do better than quote what Mr. W. R. Graham, the efficient Manager of the Poultry Dept. at the Guelph Agri. College, has recently written on "running an incubator." Mr. Graham has had wider experience in the care of incubators than any one else in Canada. His instructions are as follows: "When starting a machine set it level. This is necessary with hot-air machines especially. Then examine the lamp and see that the fine wire gauze in the burner is clean. This is necessary to get a good, clear flame. An old tooth brush is suitable for cleaning the gauze. The gauze should be cleaned once a week at least, more often if the room is dusty. If this is not done the lamp is more inclined to smoke. A new wick is placed in the burner, the lamp flue or smoke flue is examined and cleaned if an old machine. The lamp is now filled with good oil and lighted. Use oil that weighs about 7.80 pounds to the gallon, as the better the oil the less trouble with smoke, burners, wicks, etc. Next examine carefully the interior of the machine and brush it out thoroughly.

Place about 5 thermometers in a machine, one at each corner and one in the centre. See if they register nearly the same. If there is more than 2 deg. difference raise or lower one side of the machine. Try and get your machine to heat as nearly even as possible. If you find the centre of the machine very warm or other "hot spots" over the tray you will require to screen these by placing strips of tin or cloth above so as to prevent the heat, or, in other words, check the heat in this particular spot. I usually run a machine about two days before I place the eggs on the trays. If it will not work empty I do not care to try to make it work when it is full of eggs.

"The eggs are tested the 9th day. They are easily tested then, the dark ones are fertile, the clear ones infertile. After the 4th day cool the eggs on a table, the table being as large as the tray. Do not use a small table or set the tray on about ⅔ of the way, for the reason that if this is done the eggs exposed over the end of the table will cool much faster and are exposed to a draft. Cool until the eggs feel cool. Another test is made on the 16th day, sometimes on the 14th day. After the evening of the 18th day do not cool any, and I would favor closing the machine then until the hatch is over.

"Do not turn eggs when your hands are dirty or covered with coal oil. This practice is common and may be responsible for bad batches. Do not expect the machine to out-hatch the perfect broody hen. Some chicks will be dead in the shell, there may be some crippled, etc., but the machine is ready to set when the eggs are ready."

HATCHING WITH HENS.

The best method of hatching with broody hens is to use a loft or pen for hatching purposes only. Darken the windows and place the nest boxes on the floor. Fill the boxes with nest material nearly full so that the hen will not have to jump down on the eggs. Set the

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OUR MALES ARE BRIGHT STRAIN FEMALES LATHAM STRAIN
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By careful attention and breeding pure imported stock year by year, I have produced in the "Lynnwood" strain that which is as near the standard as it is possible to get. Eggs from double mating: Pen No. 1, for Cockerels, $3.00 per 15. Pen No. 2, for Pullets, $3.00 per 15 or $5.00 per 30. The above Pens are special exhibition matings. Pens No. 3 and 4 are for exhibition Cockerels, $2.00 per 15. Pen No. 5 for utility, $1.00 per 15. A few Cockerels for sale. SATISFACTION GUARANTEED
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hens about dusk. The first night let the hen sit on a dummy egg, and in the morning take her off the nest. If she goes back of her own accord she may safely be given the eggs. Leave food and water always in the pen, also a dust bath. Place the same number of eggs under each hen and that number just what the smallest hen will cover. It will not matter then if the hens exchange nests.

The hens should be dusted with vermin destroyer twice during the 3 weeks. All other fowl than the sitters should be excluded from the hatching chamber. In the mornings between 7 and 8 o'clock raise the blinds and let in the light. Usually most of the sitters will come off the nest to feed. Those that do not should be carefully lifted off and all eggs examined. If an egg is broken the rest should be washed in tepid water. After the blinds have been up about half an hour, see if all the hens have returned to their nests. Good sitters will have returned in that time. Close the blinds again and the hens will usually remain on their nests until the light is let in again next day. As soon as the chicks hatch remove the hen, nest and all, for the peeping of the chicks causes the other sitters to become restless.

Do not be afraid to use pullets broody for the first time, for sitting. They make just as good sitters then as at any time in their career. To cluck is a natural instinct just as strong in a pullet as a hen.

I will add a word of warning in regard to handling and testing eggs too often during incubation. The following extract from a lecture on that subject, given by Mr. A. Newport, at Crewe, Eng., is worth reading: "Some people test their eggs, particularly white shelled ones, on the 4th day, though a much better practice is to test them on the 7th or 8th day. I ought, perhaps, here to caution against testing eggs too frequently. It is very hard for a beginner to refrain from handling his eggs, but knowing the delicacy of the blood vessels that form a perfect maze of tracery over the yolks, and, knowing that these and a further set, busy absorbing the yolk, are very highly sensitive, he will perceive that the less he interferes with the eggs, the less likely he is to damage this fragile and delicate interior. Another reason why I object to testing eggs frequently is that in so doing they are held up to the light in an unnatural position and some of the organs inside the egg are being twisted. Again, there is the light. To test eggs properly a very clear light is needed to pass through the egg. When testing I have frequently seen the light violently disturb the embryo. It would stand still a moment, then begin to wheel around and, as it were, kick and struggle. That cannot be good for development. Therefore, eggs should be tested only once, and that about the 7th or 8th day. If very doubtful about them, perhaps a second test might be given on the 14th day. I should not go beyond that because between the 10th and 18th days is the most critical period in the life of the embryo.

LIQUID LICE DESTROYER

The following questions have been sent in with a request that answers to them be published in this issue: "Will you try to find out for the chicken raisers' benefit, a liquid lice killer, that can be put on the perches and that will kill the lice while the fowl are sleeping? I use oil of sassafras, but it is too expensive for the little chicks, or the birds on the roost. The hens that are laying will have the lice killed on them by the tobacco stems in the nests, but all others not laying have to be dusted, which requires two persons and is very tedious and expensive. Tobacco ashes are put in the dust baths, but the hens do not clean themselves well."

In answer to the first question: There are two liquid louse killers on the market—Rust's and Lee's. These can be obtained from any dealer in poultry supplies. Full directions are given on the tins. The price is 40 cts. a quart. Try powdered sulphur in the dust baths and on the floor of the coops in which small chicks are housed. When the birds are put in their summer quarters see that there is plenty of dry dusting material in the pens and they will, as a rule, keep themselves free from vermin.

WINNERS AT OTTAWA

At the Fat Stock and Poultry Show at Ottawa, March 5 to 9, the largest classes were the Barred Rocks, White Leghorns, and White Wyandottes. The show surpassed all previous attempts in the quality and in the entries. The first prize Barred Rock cockerel was owned by a young Ottawan, who is employed by the electric company and who keeps fowls as a pastime. He has spent a good sum in purchasing eggs from the best sources and could have sold his cockerel at $30 or $50. He says his fowl return him a profit. The first prize White Wyandotte cockerel, also, was bred and owned by an Ottawan, a member of the staff of the Militia Department, who likewise keeps fowl for recreation and profit. He has tried for first honors for several seasons, and by keeping at it has at last succeeded. Nearly all the first prizes for White Leghorns went to an Ottawa man, who has a machine and bicycle shop in the city, and a small farm in the suburbs. He manages both with success and says, when he is tired of the machine work he goes out to his poultry. He has spent considerable in getting the best stock and is now being reimbursed by being able to sell stock and eggs at a high figure. These facts show that any one who will give attention to the details of poultry raising, even in a city back yard, can be successful. These exhibitors, and others not mentioned, won the honors over the heads of many old breeders hitherto considered invincible. This should induce some, who do not keep pure-breds, to secure some at once, and so more thoroughly enjoy poultry keeping.

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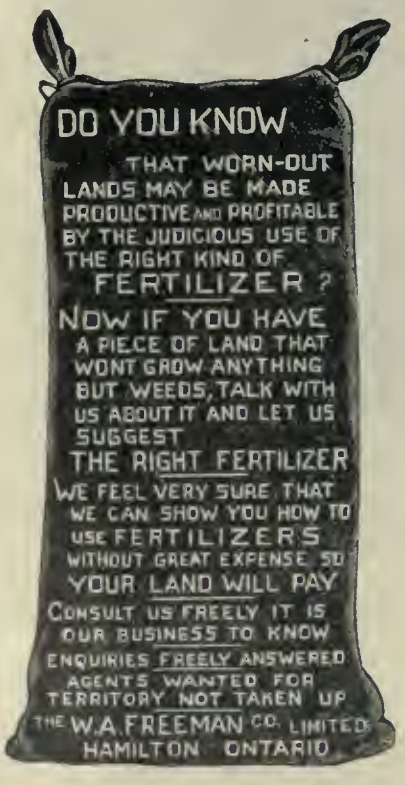

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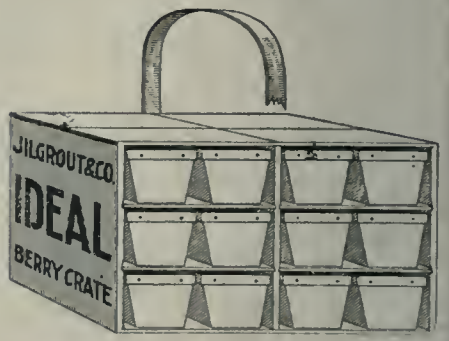

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On account of the potato disease being so prevalent in Great Britain for many years, there has been an effort to produce a blight and disease proof potato, as well as a heavy cropper. The result is the Eldorado, introduced by Mr. A. Findlay. It is owing to the wonderful cropping qualities of this potato, as well as it being a blight and disease resister, that caused the furore in Great Britain the past 3 years, and which has resulted in the highest prices—almost fabulous—ever paid, for any introduction, into the vegetable kingdom, in all time, $7,000 having been paid for 14 pounds in 1903.

The Eldorado should be of interest to Canadian growers, to whom it is now offered for the first time by Smith Bros. at reasonable prices, considering the great value claimed for this potato. Take note of Smith Bros.' advertisement in this issue.

LIGHTEN GARDEN WORK

The wonderful range of usefulness of the Iron Age Garden Implements has made it possible to avoid the back breaking labor of planting and cultivating a garden in the old-fashioned way. Write for our NEW IRON AGE BOOK and learn how much you can lighten the work of gardening this year. This book fully illustrates and describes the

IRON AGE GARDEN IMPLEMENTS

It will tell you how little they cost and how much they accomplish. The No. 6 Tool shown will plant and cover seed in hills or drills; work as a double or single Wheel Hoe; roll, rake, plow or cultivate any crop in any way. Do not fail to get our NEW IRON AGE BOOK and learn more about these wonderful tools. FREE on application.

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No. 6 Iron Age Double and Single Wheel Hoe, Hill and Drill Seeder

SPRAY, SPRAY, SPRAY

your trees for the

Codling Moth and All Leaf Eating Insects with the Best and Safest Poison which is

Swift's Arsenate of Lead

IT WILL NOT BURN AND IT STICKS

MADE ONLY BY THE

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Trees, Roses, Plants and Vines

Evergreen Trees a Specialty

Write for Price List

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Transplanted Maple Trees

For sale in quantity, from 10 to 14 ft. high, 1 in. to 2½ in. in diameter, in large or small quantities. Price on Application.

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Sure Growth COMPOST

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NONE SO GOOD FOR THE MONEY

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The Helderleigh Nurseries

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(IRIS KAEMPFERI)

These magnificent Iris are among the most beautiful of our summer flowering plants, and are becoming more popular every season. They commence blooming about the middle of June, and continue for five or six weeks. Many of these flowers measure from 10 to 12 inches in diameter, and rival the Orchids in their rich colorings and markings. While the Iris succeeds in almost any soil and conditions, they delight in a rich, deep, moist position and should be abundantly supplied with manure and water.

Named Varieties—Price 20c each, 3 for 50c, doz. $2.00.

Mixed Varieties—Strong roots 15c each, 3 for 40c, doz. $1.50.

IRIS GERMANICA—German Irises are certainly unparalleled for beauty; nothing in creation can vie with them unless the orchids from the tropics. Every shade of color may be found among them, and they will thrive in almost any soil without any care whatever. Strong roots 10c each, 3 for 25c, doz. 80c.

J. A. SIMMERS

SEEDS BULBS PLANTS

TORONTO ONTARIO

Money Given Free to People who buy Goods from Advertisers in this Issue. See Notice in Advertising Columns.

Items of Interest

The indiscriminate shipment of small, wormy and unsaleable apples to Manitoba has led the consumers to ask the health authorities of that province for protection against such fruit. It is proposed that the same course be adopted in Manitoba that is in vogue in British Columbia where fruit similar to much of that received in Manitoba is dumped into the river or the ocean.

Bad weather prevented a large turnout of vegetable growers at the monthly meeting of the Toronto branch on Mar. 3. Prof. Harcourt, of the O.A.C., Guelph, was present and offered to cooperate with the growers around Toronto in carrying on experiments with different fertilizers for the different garden crops. Over 20 growers agreed to undertake experiments under the direction of Prof. Harcourt. As none of the regular speakers were present the discussion of the questions that were to be taken up was postponed until Mar. 17. A report of this meeting appears on another page.

The members of the Brantford branch of the Ont. Vegetable Growers' Assn. was held on Mar. 15. An instructive paper on Cabbage Growing was given by R. J. Taylor, who discussed the best cultivation and the treatment of the various diseases. A general discussion followed. The question of selling cabbage by the pound was dealt with also, but nothing definite was outlined. The executive will try to have one of the professors from the O.A.C. deliver an address at the next meeting.

In some of the leading fruit sections of the U.S., where weather conditions are of vital importance to the fruit grower, the Weather Bureau is endeavoring to warn the growers as to the weather probabilities by means of whistle signals. The various conditions of temperature and of storms is to be signalled by a set code of long and short blasts on the whistle.

The members of the Ont. Fruit Growers' Assn. are progressing favorably in their efforts to form cooperative assns. D. Johnson, of Forest, and Inspector Gifford, of Meaford, recently held meetings at Simcoe, Ingersoll and Orillia. At each place they were successful in forming the nucleus of what promises to be a strong assn. At Simcoe, J. E. Johnson has taken up the work and the prospects are bright for a live assn. Organization work at Ingersoll is being looked after by J. C. Harris, while J. Ryerson and R. A. Lehmann have charge of the work at Orillia.

At the annual meeting of the Niagara District Fruit Growers' Stock Co., Ltd., held in Grimsby recently, the following board of directors were elected: R. Thompson, W. H. Bunting and J. H. Broderick, of St. Catharines; A. M. Honsberger, of Jordan, and Murray Pettit, of Winona. Some of the members thought that the day of the company's usefulness in taking the place of commission merchants has passed and advised that the fruits be purchased in the orchard or at the railway station, and shipped on quotation to regular agents or dealers.

The leading orchardists of Belleville District, after hearing A. E. Sherrington, of Walkerton, and P. J. Carey, of Toronto, explain the benefits to be derived from cooperative assns., at a meeting held on March 16, for the purpose of organizing, formed a strong organization and will handle the crop through this assn. this year.

On March 8, the Fruit Division, Department of Agriculture, received word of the following convictions under the Fruit Marks Act: John Coyle and Robert Coyle, jr., of Colborne, pleaded guilty to falsely marking 19 bbls. of apples "No. 1," the apples being inferior to that grade. They were fined $1 a bbl. and costs. Robert Coyle, jr., also pleaded guilty as packer of these apples and was fined $5 and costs. This is the fifth time that members of the firm of J. & R. Coyle have been convicted under the Fruit Marks Act.

The following resolution was passed at a meeting held March 15, at Belleville: "Moved by F. S. Wallbridge and seconded by Henry Leavers that we, the members of the Belleville District Fruit Growers' Assn. desire to express our conviction that it is in the best interests of the Fruit Industry of Canada that the industry should be placed under a Fruit Commissioner instead of, as at present, under the Dairy Commissioner, as the Fruit Industry is of sufficient importance to have a Commissioner of its own."

Mr. T. Delworth, of Weston, has been endeavoring lately to form branches of the Ont. Vegetable Growers' Assn. at Napanee, Kingston and Ottawa. It is expected strong assns. will be formed at each point. Branches are likely to be formed shortly at London and Strathroy.

FARTHER NORTH. "It is the lightest and strongest house imaginable."
HALL & ROBINSON, Montreal, P. Q.

NORTH. The lightest and most perfect greenhouse construction yet attempted. Best crop of beauties I ever had.
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EAST. "So well pleased with all points, we intend to build more of them."
G. MATTHEWS, Great Neck, N. Y.

CENTRAL. "Lightest house on the place, strong as a bridge."
W. J. PALMER & SON, Buffalo, N. Y.

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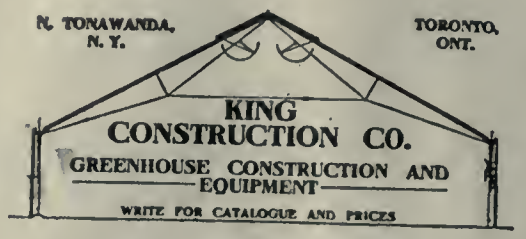

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C. H. HOPKINS, Kent, Wash.

WEST. "They are perfect in every way."
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This TRADE-MARK Insures
THE BURPEE QUALITY
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Burpee's Seeds cost but little more than do usual commercial grades—and yet are *worth* much more. At our own farms in Pennsylvania and New Jersey, as well as in the gardens of planters everywhere, Burpee's Seeds are proved by test to be the BEST SEEDS THAT GROW. Consequently we hold the largest mail-order seed trade in the world.

Our "Silent Salesman," *plain truth*, with photographic pictures of the superior products of BURPEE'S "SEEDS THAT GROW," will be mailed FREE—if YOU will write for

1876 Burpee's 1906

Farm Annual for 1906

Thirtieth Anniversary Edition of "The Leading American Seed Catalogue."

This is a handsome book of 168 pages, carefully edited and neatly printed; bound in cover lithographed in nine colors, it shows, *painted from nature*, Seven Superb Specialties in Vegetables of unequaled merit and Six Novelties in Flowers—including LUTHER BURBANK'S *New Floral Wonder*.

This Invitation to write for our New Complete Catalogue and then participate in the Special Celebration of our Thirtieth Anniversary is given to all planters who delight in raising the Choicest Vegetables or most Beautiful Flowers.

If you intend to garden this spring you will want to lay your plans, and therefore we urge you to WRITE TO-DAY!—the very day you read this advertisement. Mention this paper and address

W. ATLEE BURPEE & CO., Seed Growers, Philadelphia, Pa.

A Handsome Premium will be Given Free to all Readers who buy Goods from Advertisers.

Strawberry Plants

I have a fine stock of Plants for Spring planting at reasonable prices

WILLIAMS—The standard variety in the Niagara district.

SENATOR DUNLOP—Recommended as an excellent all round market berry.

RYCKMAN—Pan American Gold Medal.

MATILDA—Introduced by Mr. A. M. Smith, the veteran strawberry grower, very large, productive, vigorous plant maker.

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WM. H. BUNTING, St. Catharines, Ont.
"THE CARLETON FRUIT FARM"

50,000 GIANT PANSIES

Selected German and American strains, 35c. per dozen, 4 dozen $1.00. Special Prices for Larger Quantities. Also DAISIES and FORGET-ME-NOTS, 40c. per dozen. Orders Booked Now.

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Detailed plans prepared for laying parks, pleasure grounds, lawns, gardens, cemeteries, school and hospital yards. Advice given and planting lists for grouping of trees and shrubs. Terms moderate.

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MIRROR PLATE
WIRE GLASS
PRISMATIC GLASS

And all other kinds of Glass used for building purposes

Pilkington Brothers

MONTREAL Limited TORONTO
VANCOUVER WINNIPEG

Yes, It Pays to Buy the Best

This applies to Nursery Stock as well as other things. ¶ If you intend planting any Fruit or Ornamental Trees, Shrubs or Vines, send for our 1906 Catalogue—just out.

THE DOMINION NURSERIES
ESTABLISHED 1860
The Smith & Reed Co. St. Catharines, Ont.

ANNOUNCEMENT.—For the purpose of demonstrating the ability of "Target Brand Scale Destroyer" to kill San Jose Scale and yet do no damage to trees, I will furnish 2 gals. (enough for one 32 gal. bbl. of solution) f.o.b., Jordan Station, gratis to a limited number of applicants throughout Canada. I desire to have these tests made on infested trees not included in an area larger than can be thoroughly covered with one bbl. of mixture—want no other infested trees near by. Would be pleased to receive information regarding such spots from those who have sufficient interest in the extermination of this pest to see that these applications are made as instructed. Guaranteed to do no damage to trees. Kills 99 per cent. of scale. "Target Brand Arsenate of Lead" beats all in extermination of codling moth and other insects, and remains in suspension, and stays on. W. H. Brand, Jordan Station, Ont., Canadian Distributor.

FACTORY IN CANADA.—The Niagara Gas Sprayer Co. has made extensive sales in Canada during the past few years and has decided to establish a factory near St. Catharines to supply their Canadian customers. The factory at Middleport, N.Y., recently has been running night and day. A carload of machines has been shipped to Portland, Oregon, and some of these will be forwarded to British Columbia. The Ont. Government has purchased one for experimental work. About 20 of the machines in use in Canada have been taken back to the factory and equipped with new fittings and made equal to the 1906 machines.

THIRTY-SIXTH CATALOG.—The 1906 seed catalog issued by Wm. Ewing & Co., of Montreal, contains a full list of the leading varieties of seeds, plants, and bulbs used by florists, gardeners and farmers, as well as tools and other sundries handled by seedsmen. Directions for growing the various garden crops, for making hot beds and other valuable information is given. Every gardener and flower lover should secure a copy. The special collections offered are particularly good value for the money.

IT BROUGHT RESULTS—Mr. W. H. Bunting, of St. Catharines, wrote us recently as follows: "Kindly withdraw my advertisement of the Gold Coin Potato, as I am all sold out. Orders came in with a rush a few days after the March number of THE HORTICULTURIST was out. I received many enquiries for my strawberry plants also. You may continue my strawberry advertisement. I consider THE HORTICULTURIST an excellent medium for reaching the best class of buyers.

LARGE PURCHASES.—Recognizing the desirable qualities of the crimson red canna, Mrs. Wm. F. Kasting, listed by Wm. F. Kasting, of Buffalo, Park Commissioner Chambers of Toronto has secured a large quantity for use in Toronto parks this season. This brilliant canna stands almost 4 ft. high, and is very prolific. Florists prize it highly for conservatory decorations. At the World's Fair in 1904 it was awarded a gold medal.

THOSE DESIRING GRAPE VINES and currant bushes will find the stock supplied by Mr. Joseph Tweddle, of Fruitland, gives entire satisfaction. Mr. Tweddle has grown stock for some of the leading nurserymen for 28 years.

Reports from the leading nurseries in the Niagara district indicate that the stock has wintered well. The Pelham Nursery Company intimate that never in the history of their business have the season's prospects been better than this year. Their agent reports very satisfactory sales from all districts, and their stock is in the very best condition.

Classified Advertisements

Advertisements under this heading will be inserted at the rate of ten cents per line, each insertion; minimum charge fifty cents in advance.

LANDSCAPE GARDENING, PLANS FOR PARKS, cemeteries, public and private pleasure grounds made. Drawings made to a scale, so that any gardener may carry them out. Correspondence solicited. CHAS. ERNEST WOOLVERTON, Landscape Designer, GRIMSBY.

WANTED—Persons to grow Mushrooms for us in waste spaces or barns, in gardens, orchards or small farms. $15 to $25 per week. Send stamp for sixteen-page illustrated booklet on Mushroom Culture and full particulars. MONTREAL SUPPLY CO., MONTREAL.

FOR SALE—Old established tree nursery. Large connection and profits. Easy terms. Best sandy loam. Apply THOMPSON, 17 Queen St., St. Catharines. Also profitable fruit farms for sale on easy terms.

CHANCE OF A LIFETIME—Well-established Florist business. Greenhouses, House and Stable, for sale cheap. Apply 25 Triller Ave., Toronto.

OVER TEN MILLION GRAPE VINES

Are annually propagated at Fredonia, N.Y. The soil and climate here are such that better vines are produced than anywhere else, and at less expense. I will mail two sample Vines for 10c. and an interesting and instructive pamphlet (B) free.

LEWIS ROESCH, Fredonia, N.Y.

152 PAGES—READY NOW
FREE, Write or Call
Vaughan's Seed Store

STRAWBERRY Plants For Sale

Every garden should have an extra early and extra late variety to expand the season of fruiting to its full limits.

SPECIAL OFFER—60 early and 60 late plants sent postpaid to any address for $1.00.

Attractive prices on thousand lots of Haverland, Parker, Earl, and Williams. TERMS cash with order.

JOHN DOWNHAM
Strathroy Ontario

WENTWORTH POTTERY

Standard Flower Pots, Fern Pans Hanging Baskets. Cut Flower Jars and all Florists' Supplies.

Mail Orders given Prompt Attention.

John Cranston & Son
HAMILTON, CANADA

A Handsome Premium will be Given Free to all Readers who buy Goods from Advertisers.

FLOWER POTS

Now is the time to order them for Spring trade. We have a large stock of all sizes on hand and can make prompt shipments.

Drop us a post card for Catalogue and Price List.

THE FOSTER POTTERY CO.
Limited
MAIN STREET WEST HAMILTON

Baby Rambler
In bloom all summer

PLANTING TIME

will soon be here. Have you placed your order for Trees, Vines, Shrubs, etc.? Do not delay. Remember, we can supply your wants at a reasonable price. For street, lawn or orchard. See *free* catalogue for verity and PRICES. Choice Seed Potatoes, etc. BARGAINS in Apple Trees for March. *Write us.* 26th year.

A. G. HULL & SON
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Northern Grown Trees

Apple, Pear, Plum, Cherry, Peach, Nut and Ornamental Trees. Small Fruits, Roses, Shrubs, cheap. Specialties: Wismer's Dessert Apple and Mammoth Prolific Dewberry.
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More Underwood Typewriters are in use in Canada than all other makes Combined.

We carry a large stock of rebuilt typewriters at very low prices. Send for Catalogue and List.

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Represent the survival of the fittest. We have become the largest seed house in the world because our seeds are better than others. Do you wish to grow the most beautiful flowers and the finest vegetables? Plant the best seeds—Ferry's.

1906 Seed Annual free to all applicants.

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Best for Butter

Windsor Salt will make money for you in two ways.

It makes better butter—richer, tastier. As it d solves quickly, and works in easily and evenly.

It cuts down your salt bills, because it is absolutely pure, and requires LESS to properly season the butter.

The first trial will prove this. Your dealer has Windsor Salt or will get it for you.

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We are Headquarters for all kinds of Splint Baskets

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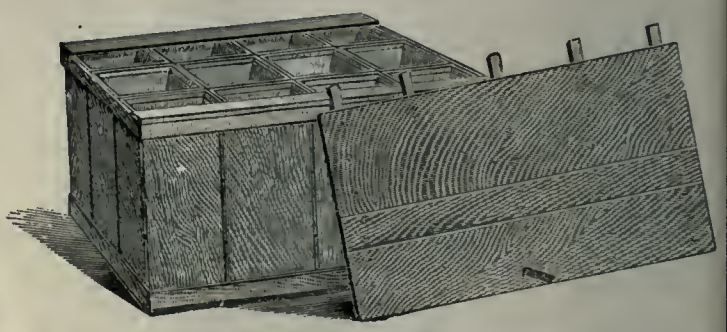
supplied for the protection of trees from mice during winter

FRUIT PACKAGES
A Specialty
SEND FOR OUR PRICES

THE OAKVILLE BASKET CO.
OAKVILLE, ONTARIO



Small Fruit Plants

Gooseberry, Red, White—Currants, Red White, Black—Raspberry, Red, Yellow—Blackberries — Strawberry-Raspberry — Grapevines, Campbell's Early, Eaton, Worden, Moore's Early, [Salem, etc, all hardy sorts — Strawberry Plants—House Plants—Roses—Rhubarb and Asparagus Roots—Order early.

WM. FLEMING
NURSERYMAN
P.O. Box 54 OWEN SOUND, ONT.

Money Given Free to People who buy Goods from Advertisers in this Issue. See Notice in Advertising Column.

The Canadian Horticulturist

Vol. XXIX MAY, 1906 No. 5

Fruit Should be Consigned Direct to Retailers

NOW that Canadian fruit growers are beginning to cooperate, more attention is being given to the marketing end of the fruit industry than ever before. The result is that growers are finding that there is a host of middlemen, both on this and on the other side of the Atlantic, who have been absorbing the greater part of the price paid for the fruit by the consumers. The returns that ultimately reach the growers are, after all, astonishingly small when compared with the price for which the fruit is finally sold in Great Britain.

Growers should receive cash for their fruit before it leaves their hands. Investigation shows that the most foolish practice is the shipment of fruit to dealers in Great Britain to be sold on commission. While, probably, the great majority of the dealers are honest, many are not, and these men rob the growers right and left. Cases of this kind have come to light nearer home, at Winnipeg, for instance, and even in Toronto, the good.

The various cooperative fruit growers' associations in Ontario have had no difficulty selling their fruit for cash f.o.b. Most of them could have sold several times the amount of apples they did had they had them. "One buyer offered to purchase 50,000 barrels of apples from us last year," said Mr. D. Johnson, of the Forest Association, to THE HORTICULTURIST, recently, "and we could have sold 100,000 barrels had we had them." Remarks to the same effect have been made to THE HORTICULTURIST by officers of most of the other cooperative associations in the province. This shows that when growers cooperate and are able to offer fruit, properly graded, in considerable quantities, they will be able to sell it readily for cash and at satisfactory prices.

The cooperative associations should now carry their work a step farther by eliminating the middlemen in Great Britain and selling direct to the retailers or groups of retailers. Not only are Canadian growers beginning to realize the need for action in this direction, but the British retailers are awaking to the fact that they can increase their profits greatly by dealing direct with the Canadian producers. Evidence of this is afforded by several letters that are in the possession of THE HORTICULTURIST that were sent to Mr. A. E. Sherrington, of Walkerton, the well-known manager of the Walkerton Fruit Growers' Association, by leading retailers in different cities in Great Britain.

One of these letters, from a fruiterer and florist in Liverpool, shows clearly how the British retailers are waking up and beginning to endeavor to order their fruit direct from the Canadian growers. This letter reads in part as follows:—

"I think it would be much better if the grower could send his apples direct to the retail man, as I have sometimes paid 12 to 60 cents a barrel profit to the wholesale merchants in addition to the wholesale charges that they had to pay to the auctioneer. You will see, therefore, that there is a lot of profit made out of the fruit between the time it leaves the grower and the time it reaches the retailer. I ordered only 40 boxes from you but I am using about 30 barrels a week. I have bought this morning XXX Greenings from Brighton, Ont., for which I had to pay four dollars each. Barrels of Baldwins also cost four dollars, while some barrels of Kings cost five dollars and fifty cents. How do these prices compare with those the Canadian growers probably received for this fruit? I feel sure that if I can get the apples direct so much cheaper, a big demand will be created for them and I shall be only too pleased to do business with you whenever you can get the right quality of stuff."

The Best

Without being asked, I wish to state that I think the April number of THE CANADIAN HORTICULTURIST is the best edition of any horticultural paper that has ever been published in the Dominion of Canada.

G. C. CREELMAN,
Pres. Ont. Agri. Coll., Guelph.

Another letter is from a firm in an inland city in England asking for 200 barrels of XXX Baldwins, subject to government inspection. A third letter was written by a firm in Leicester and reads as follows:—

"Will you please quote me for 25, 50, 100 and 200 barrels of apples f.o.b., and rate to Liverpool. I want to induce our local retail fruiterers' association to buy direct from the growers. I will place your reply before the committee as soon as I receive it."

These letters show what a splendid opening there is for our fruit growers to deal direct with the retailers in Great Britain, if they will only recognize their opportunity. In regard to the first letter, growers will realize that if the apples sold for four dollars a barrel to the retailers in Great Britain, the middlemen must have pocketed $1.25 to $1.50 on each barrel, as the prices paid the growers this year for XXX fruit ranged from $1.25 to $1.50 a barrel. If to this is added $1.25 for railway, shipping and similar charges, and that is a reasonable allowance, there is left $1.25 to $1.50 a barrel. Most, if not all, of this could be saved were our growers to ship direct to the retailers.

UNSATISFACTORY FEATURES

Last fall Mr. Sherrington spent a number of weeks in Great Britain, during which period he made it a point to watch the manner in which Canadian fruit is handled and to talk with retailers in regard to direct shipments. His trip has convinced him that Canadian fruit growers lose large sums of money every year by having their fruit sold on commission. He is of the opinion, also, that were a representative of the growers to visit the retailers he could work up a demand sufficient to absorb all the XXX fruit packed in Ontario.

In a recent letter to THE CANADIAN HORTICULTURIST, Mr. Sherrington speaks plainly on a number of these points. After referring to the many benefits that would follow were our fruit growers to sell their fruit through local cooperative associations, Mr. Sherrington says:—

"Last, but by no means least, the fruit should be sold f.o.b. at the packing house, for why, in the name of common sense, should fruit growers send their fruit to any man, or firm of men, to dispose of as he or they please? Are there any other products of the farm that are

marketed or treated in the same manner as the products of our orchards?

"What we need is more cooperation among Canadian growers and the retail merchants and the consumers in Europe. If the retail merchants of Europe were interviewed, a large trade could be worked up direct between the growers and the retailers and consumers. It is computed that Canadian apple growers are paying away unnecessarily, on the other side, in market dues, tolls, portcrage, cartage and cataloguing $500,000 to $750,000 yearly, and not only unnecessarily, but for the privilege of sending our goods to one or two centres only for distribution, to their disadvantage. The time is not far distant, however, when the growers will wake up to this fact, and, also, to the fact that there may be other and better methods of distribution all ready to their hand beside the auction channels of London and Liverpool.

"Who are the customers of the auctioneers in these cities? Why cannot we ship our goods to them direct? These are questions that growers everywhere in Canada, and in other countries too, are asking themselves. The selling of fruit by auction has a great many attendant evils where there are competing firms, unless one of them has the monopoly of the article sold, which is possible sometimes, or the exclusive right to the attendance of buyers, which is never possible. The fruit auctioneer, like every other human being who has to work for his living, is naturally looking out for himself, first and last, and in his hurry to get rich he is not always the far-seeing and wise individual he might be. Sometimes he injures the very people he would protect, did he but stop to think for a moment. For instance, I am told the following is a common practice amongst certain fruit auctioneers. When one has got to sell 3,000 barrels of Canadian apples on a certain day, and notifies his clients of the fact by printed bill, and by notice on a large slate placed near his auction stand, a rival firm, who desire to lower their opponent's prices, also advertises a like quantity, although they may not have any to sell. In this way buyers are drawn away from the real sale who are given plausible excuses by the second firm when they find it has no apples to sell. In this way the price of the fruit is kept down and a man does not need to be told what this means to the grower. Such work as this leads to retaliation by the first firm and the injury to the trade is thus extended.

"The apple crop of Canada is fast assuming enormous proportions. Our population is not increasing with sufficient rapidity to be able to consume the fruit, and consequently the British market must receive each year much increased quantities. The problem we have to face is how to market the fruit to the best advantage. There are signs that growers are becoming more keenly alive to their interests, and that they have a desire to get into more direct touch with the consumer and thus secure for themselves more economic distribution than the present wasteful auction systems of London and Liverpool. Cooperation on the part of the growers is the right key to the situation, and may be the beginning of a system of distribution similar to that adopted and found sound by the fruit growers of Southern California. It may be some little time before the Canadian growers arrive at this ideal stage, but it will come, and God speed the time when their representatives will take the place of the present London and Liverpool auction houses."

Is it not time our Canadian growers were taking action to remedy these matters? Readers of THE HORTICULTURIST are invited to forward their views for publication and to give the results of their experience in the shipping of fruit.

Cooperation in the Annapolis Valley*

James H. Tupper, Round Hill, N.S.

THE only way fruit can be handled satisfactorily is by cooperation. The cooperative movement is bound to result in great financial gain to orchardists.

The fruit industry naturally divides into two parts or sections: First, that of production, and second, that of marketing. It is one thing to grow fruit successfully, but it is another to market it successfully. Production has to do with planting the trees, caring for the orchard and picking the fruit; marketing has to do with preparing for the market, carriage to the market, and selling in the market. We can successfully deal with the former individually, but not so the latter.

Every farmer can attend to his own orchard, and with the information he can get from agricultural colleges, experimental farms, agricultural papers, model orchards and successful orchardists, he should be able to produce the best fruit at the least cost. Each man can cultivate, fertilize, prune and spray his orchard separately and in a certain sense independent of his neighbor, but he should cooperate with his brother farmers to obtain a uniform package, the best and cheapest transportation service and the best method of disposing of his stock.

Cooperation among fruit growers should have three aims or objects—cooperation in transportation, in packing, and in selling. To cooperate in transportation the fruit would have to be collected from the growers, loaded on steamers and delivered at the point of shipment. Each operation would need to be done in the most systematic and business-like way. To do this would require organization, and to organize properly we should commence at the inside and build outward. If we are to cooperate successfully in Nova Scotia, it will be necessary to have the whole Annapolis Valley, or as much of it as possible, organized. It is better, for purposes of interior economy, that this organization should consist of a number of smaller societies working independently but under one general management, rather than to have one large association covering the whole district. The plan already followed is to form a branch society at each shipping point, or in each locality where it is thought best, and to elect officers consisting of a president, secretary and treasurer.

The duties of the secretary and the treasurer would be to record the minutes of the meetings and receive any monies for fees or collections that might be made. The duties of the president would be to look after the apples in that district, notify the farmers when to ship, order cars, attend to the loading and billing of the same, and perform duties similar to the middlemen or shippers of to-day. Delegates could be appointed from these branches to choose a manager. The presidents would form a directing committee to assist and advise the manager in the general direction of the business.

The duty of the manager would be to receive the apples at the point of shipment, take all necessary precautions against frost, look after loading and consigning, and attend to the business generally at his end of the line. He would be expected also to give the members all the information he could in respect to markets, crops and prices, to make the best sales possible, receive and hand the orders over to the presidents, and work entirely for the interests of the grower.

Each association would be incorporated and empowered to make rules and by-laws governing its members. The line of responsibility would run from the grower to the manager. The president would hold each member in his

*Read at the last annual convention of the Nova Scotia Fruit Growers' Association.

The Men who Guard the Reputation of Canadian Fruit

Here are shown all the fruit inspectors of the Dominion Department of Agriculture, from the Atlantic, in the person of Mr. G. H. Vroom, of Middleton, N.S., at the extreme left, to the Pacific in Mr. Maxwell Smith, of Vancouver, B.C., at the extreme right. This photograph was taken at the recent Dominion fruit conference at Ottawa, which was the first occasion on which all the inspectors met together. In the centre of the front row may be seen Mr. Alex. McNeill, chief of the fruit division. On his left is Mr. J. J. Philp, of Winnipeg, and on his right Mr. F. L. Dery, of Montreal, Que. Those in the back row, reading from left to right, and starting next to Mr. Vroom, are Messrs. E. H. Wartman and J. F. Scriver, both of Montreal; Mr. P. J. Carey, of Toronto, and Mr. A. Gifford, of Meaford, Ont. At the Dominion fruit conference these men were highly praised by the delegates from all the provinces for their splendid work and for the tact and judgment they have displayed.

district responsible for the number of barrels he agreed to ship. This would make the president responsible to the manager for all the apples in his district, and in turn the manager a responsible party for any company to do business with. By having a large number of barrels under his control he could make much better terms with the steamship and railway companies than the individual growers can.

There are two reasons for the exorbitant rate on apples: One is that the growers have to pay what the steamship companies demand because they are not in a position to do otherwise; the other is the companies have to charge a high rate so that they can give large rebates to agents to do work that the growers' agents should be doing. As long as the present system continues, as long as we remain inactive and unorganized, the high rates will prevail. We are apt to censure railway and steamship companies for their high charges, but we as growers are more to blame. We have it in our power to make conditions much more favorable to ourselves. It remains to be seen whether or not we will do it.

By shipping from Annapolis and Victoria Beach there would be a saving in railway charges. We can obtain an ocean rate from these ports of 28 cents on small cargoes from 7,000 to 10,000 barrels. The subsidy we should get would reduce this from five to eight cents. I do not think it too much to expect a 40 cent rate. The railway charges on this end should not average half what they do, or nine cents. The expenses for collecting the apples would be about four cents per barrel for president, two cents for manager, and five cents additional for unforseen expenses, bringing the total cost up to 60 cents. This means a saving of 30 cents to the grower in shipping expenses. It does not seem much on one or two barrels, but when you have several hundred in one year, and several years in shipping, it counts up enormously.

The growers are ready for this movement. Cooperation seems to be in the air where every farmer can breathe it. The editor of an agricultural paper, when on a trip through the valley last summer, said: "I am glad you people down this way have got hold of cooperation." That doesn't half express the condition of things. It is cooperation that's got hold of us We must expect to meet with discouragements, disappointments and opposition, but not failure. There are no difficulties or oppositions to be met with that cannot be overcome by a determined and united effort on the part of the fruit growers.

Cooperation in packing is not of first importance, because it would be necessary to have central packing houses, and have the fruit brought to these and packed by experts. This would entail considerable cash expenditure on the part of the grower, and if he had never seen the beneficial results of cooperation he would think long and seriously before doing it. The saving to be effected in the transportation is an incentive for union. After we have gained knowledge by experience, and have more plainly seen the need of uniform packing and packages, and, above all, have gained that confidence in one another that is so necessary for the success of any cooperative society, we will be willing to furnish the capital for such additional outlay as may be necessary.

The advantage of a good and uniform package can hardly be over-estimated. It would inspire confidence in the buyer as well as the seller. We could guarantee our entire output, and when buyers knew the brand could be depended on, they would pay 25 to 50 cents more per barrel than they otherwise would. In this way the grower would be more than repaid for his outlay. Much can be said in favor of uniform packages, whether of box or barrel. It seems to be the only way that we can gain the best reputation and

have the consumer hold our fruit in the high esteem in which it should be held. One bad packer spoils the reputation of 10 good ones. We should learn a lesson from our neighbors in California, British Columbia, Ontario and other places who have adopted this system, and are working it successfully, often disposing of their entires tock before it leaves the warehouse.

As for cooperation in selling or marketing, almost any change from the present conditions would be desirable. No matter what state the market is in when our fruit arrives, in most cases a sale has to be effected. It is ruinous to the grower to have his fruit, when landed, sometimes in bad condition, forced on a market that is already overcrowded. The net returns occasionally are barely sufficient to pay for the barrel. One remedy for this would be to have an agent on the other side who could interview some of the larger buyers and sell direct to them, thus saving much of the expense connected with an auction sale. It would be an advantage to the grower to carry the sale of his fruit as near to the consumer as possible, as the oftener it changes hands the worse it is for both. It means one of two things: the grower receives less, or the consumer pays more. The nearer the consumer and producer can be brought together the better for both, and with our central packing houses and reputation established for honest packing, we would, in a short time, be able to sell our whole stock before it left the warehouse.

It is an open question whether or not it would be better to take our fruit to the buyer or bring the buyer to our fruit. Our first efforts should be expended in getting in touch with some of the larger buyers who handle 1,000 to 5,000 barrels weekly, and who are as anxious to get in touch with us as we are with them. It would be greatly to their advantage to deal with anyone who could supply them with large quantities of well-packed fruit throughout the season. It would be much better for the growers than sending steamer load after steamer load without any system or regularity, and having to run the risk of good or bad returns.

We must remember that our fruit area is rapidly widening. In a few years, even in the Annapolis Valley, we will be producing double what we do now. It behooves us as growers to look well to our method of selling. By a better and more systematic arrangement we can save enough per barrel to turn the scale between profit and loss in production.

Successful Cooperation at Forest

THE Forest Fruit Growers' Association in Ontario handled 4,700 barrels of apples and 50 boxes of fruit last fall, all of which were sold to a buyer from England, who represented a number of small firms. This buyer paid cash for the fruit before it was loaded on the cars. "We could have sold our fruit to former customers in the Northwest," said Mr. D. Johnson, the president of the association, to THE HORTICULTURIST, "but this buyer agreed to purchase our entire output and, therefore, we decided to sell to him. He remained at the packing house, where he examined the fruit as it was packed, and thus he knew what he was getting. Several other firms were anxious to purchase our output, one buyer alone offering to handle 50,000 barrels. We could have sold 100,000 barrels of apples had we had them.

"Our membership was not as large as the previous year, owing to the fact that early in the season we adopted a by-law compelling all our members to spray their fruit four times. While we lost a number of members, the result of this by-law was that every member had a fine crop of fruit. The fruit was sprayed four times, twice before and twice after the blossoms fell. Each of our members purchased their own sprayers, most of them obtaining hand sprayers at a cost of about $15 each We lost about 20 members through their refusing to spray their crops, and the result was that these men had almost no fruit, as scab and fungous diseases reduced their crops.

"People have no idea of the fungous diseases we have to combat in our section, and the care that is required to fight them successfully."

On being asked what capital the Forest Association has, Mr. Johnson replied: "Our only capital is $15, subscribed at the rate of 25 cents each by our members. The bank advances us all the money we require on the note of the directors of the association. The directors do not ask for any security for the risk they run. As soon as the first car is packed and sold, we deduct from the proceeds such money as we may need. This year the bank did not ask for a note. Every week we strike a rate and the members of the association are charged their share of the expenses in proportion to the amount of fruit handled for them by the association. Members are paid weekly according to grade of fruit packed. Our fruit has given the buyers every satisfaction as it has been well packed, the work having been done by Mr. F. Steele, who has had considerable experience as a packer. Before we secured his services he used to work for the buyers."

"Have the buyers made any attempt to break up your association?" was asked by THE HORTICULTURIST. "The local buyers objected at first, and tried to coax out some of our members," said Mr. Johnson, "but the big buyers are in favor of what we are doing, and are anxious to purchase our full outfit. Our fruit is packed in a building used during the winter as a skating rink, for which we pay $15 rent. This building, which we use during about only three months in the year, is some 40 rods from the railway. Our apples are moved from the building to the railroad on drays at an expense of two cents a barrel. Last year we handled about 6,000 barrels.

"Crops outside those of the members of the association were almost a complete failure last year. Buyers would not look at other people's crops that were not sprayed. The orchards of the members of our association were almost an oasis in the general ruin. Our good crops last fall will help us when we come to sell our fruit this year. We expect a number of the growers who left us last season will join the association again during 1906. We do not accept members unless we are satisfied that they will take proper care of their orchards, and that they are likely to send us good fruit. When an application is received for membership, it is considered by the directors before being accepted. Any of our growers who sell their crops outside of the association can be fined 50 cents a barrel for every barrel so sold. Some of our growers were offered 25 cents a barrel more for their apples than they were likely to get through the association, but none of them sold. Our agreement with the growers could be enforced, as it is a signed statement.

"A number of growers came to me during the season," continued Mr. Johnson, "and wanted to join our association. I asked them if they had sprayed, and on their replying that they had not, I told them that we could not accept their fruit. Some of them pleaded that an exception should be made in their case, but all were refused.

"Those growers outside of our association who happened to have good fruit were allowed to sell it to the association. We bought this at the rate of $1.60 per barrel for firsts, and $1.35 for seconds. We sold it at a profit of 40 to 50 cents per barrel on firsts, and 25

The Rink that is the Headquarters of The Forest Fruit Growers' Association

The officers of the Forest Fruit Growers' Association have not incurred the expense of putting up a special building for the handling of their fruit, but use the Forest curling rink, which has answered their purposes. The building is 150 x 40 feet. Among the people shown in the photograph is Mr. D. Johnson, the president of the Association, and Mr. Idiens, the English buyer, who last year purchased all the fruit packed by the Association, paying cash. This shows that buyers will visit the growers direct when they know that they can obtain sufficiently large quantities of fruit properly packed.

cents a barrel on seconds. We bought about 100 barrels of fruit in this way, the profit on which was turned over to the members of the association."

When asked how the association obtains its supplies, Mr. Johnson replied: "We make our own barrels. This year 1,500 to 2,000 were made in our orchard for our own apples, the rest being made by a Forest cooper. The supplies are bought from the manufacturers, and barrels having eight hoops cost us 27½ cents each. The ruling price in our section was 32 cents. We have two coopers who are employed during the apple season."

The following letter from Mr. Idiens of the firm that handled the fruit shows how it arrived and how well satisfied the firm was and promises well for further orders.

"'I was at Evesham, our head office, recently and found that the firm are very well pleased with the pack as well as with the fruit. They are more than satisfied and say that every credit possible is due to the association for such good, honest packing. As you know, it is hard to work up a brand here, as it takes time for people to catch on. Now when your fruit is nearly all sold people are wiring and telephoning from all parts for it. It will be easy for us to sell it another year.'

INDIVIDUAL SHIPPING.

"While the great bulk of the fruit grown in the vicinity of Forest is handled by our association, yet it would be wrong to ignore the good work done by Mr. H. A. Hodgson, a progressive and energetic fruit grower, who, with about half a dozen growers, has been shipping the fruit grown by them for several years to Dundee and Glasgow. Mr. Hodgson, who is a good packer, oversees the work of making up car lots, and consigns the fruit through in his own name, although each grower packs his own fruit, putting his own name on the barrel. The commission merchant sells each brand according to its merit and remits to the grower accordingly.

This company, although known to the trade by no particular name, has done good work, and as they have shipped several cars for years to their own brokers, their fruit has become known and they have realized high prices. Mr. Hodgson has but little faith in anyone making a success of fruit growing unless he sprays thoroughly, and he has done much to encourage his neighbors to grow a better class of fruit as well as to pack and ship their own produce."

Fire Blight on Pear Trees

What causes fire blight in pears? I lost three trees last year, and three the year before. Last year half of each tree dried up.—F. F. Reeves, Humber Bay, Ont.

PROF. F. C. SEARS, Truro, N.S.: This is one of the few diseases of plants that is definitely known to be caused by bacteria. Experiments show there is little, if any, benefit from spraying. The bacteria winter in old diseased portions of the tree, mostly about the tips of twigs and branches, but to a considerable extent in patches of diseased tissue on the limbs and even on the trunk. When growth of the tree starts in the spring the bacteria renew their active growth and extend the boundaries of the diseased parts, being carried by insects and birds to new places. The new points of attack are especially about the flowers and the tips of growing shoots. To these points they are carried by honey-eating insects, especially bees, and from them spread rapidly down the branch, killing the leaves and causing the familiar brown, burned appearance that gives the disease its name. Towards autumn the rapidity of the spread of the disease gradually decreases till the bacteria enter their quiescent state for the winter. The only remedy that has been found at all satisfactory is the knife, and it must be used freely but carefully. The trees should be gone over very carefully in the autumn and again in early spring and every vestige of diseased tissue cut out, along with a great deal of wood that appears perfectly healthy. It is a good rule in removing a diseased branch to cut a foot below where the disease shows in order to be perfectly sure that all germs are cut away. All the diseased trimmings should be promptly burned.

It is also necessary to frequently sterilize the knife and saw with which the operator is working. Otherwise, instead of checking the disease, it may actually spread it, as the tools will carry the germs and each cut will act as an inoculation.

For the purpose of sterilizing tools, Waite recommends the following: "First, mercuric chloride, or corrosive sublimate, one part to 1,000 parts water; second, five per cent. carbolic acid solution; third, a solution of chloride of

lime. The first may be prepared by purchasing tablets of a definite amount at a drug store. These tablets can be kept in a small bottle and a pint or a quart bottle filled with water and one of the tablets added. Upon concluding work the bottle should be emptied to avoid the danger of poisoning children and unsuspecting persons. Carbolic acid solutions may be prepared by simply adding a teaspoonful or more to a bottle of water and shaking it up. The saturated solution that contains about five per cent. of carbolic acid is the proper strength to use. A solution of chloride of lime will answer about the same purpose and is made by adding about 20 parts of water to one part of commercial chloride of lime, shaking it up and pouring off the clear liquid. This is only for use when fresh. Any of these solutions can be carried by the operator, and a strip of cloth a yard or so in length should be fastened to the clothing, leaving one end free. When cutting into active blight the end of the cloth may be kept saturated with the disinfectant and the knife sterilized by wiping before using it on sound wood."

WHAT PROF. EDWARDS SAYS

Prof. S. F. Edwards, Guelph: Fire blight or twig blight is a bacterial disease affecting not only pear trees, but also the apple, quince, crab, mountain ash, service berry, and several species of hawthorn. It is easily recognized at first sight by the brown and subsequent blackened condition of the young leaf tufts and flower clusters, and the blackened, shrivelled bark of the young twigs, as though a fire had passed over them. The disease passes rapidly to the larger branches and limbs and finally to the trunk, sometimes affecting the whole tree within ten days. The spread of the disease is more rapid in warm, moist weather, and on trees subjected to high cultivation and heavy pruning that tend toward the growth of tender succulent shoots which are easily infected by the germ which causes the disease.

The only treatment is the judicious and continuous use of the saw and the pruning knife. All affected twigs and branches should be cut out, the cut to be made at least 10 inches below the discolored portion, and these diseased prunings should be burned. It is essential not only to watch the pears for appearance of the disease, but the apple, quince, and related species as well, as the bacteria may be carried from tree to tree by bees and other insects. Constant care and watchfulness are essential, and the fruit grower whose trees are affected should lose no time and spare no pains in instituting vigorous measures for the eradication of the disease.

Hardy Wild Flowers for the Garden

A. Alexander, Hamilton, Ont.

WE are now at the time of the year when flower lovers gravitate to the woods, to visit the haunts of the hepatica, the blood-root, the spring beauty, the trillium, and others. How delightful is this annual pilgrimage to look on these early "earth-born blossoms," in the midst of their native surroundings, and see the annual miracle of awakening plant life! With what loving tenderness and admiration we gaze on them when found! How carefully we pick a few of these earliest of the wonderful train which will stretch through the coming months, so that those at home may also see and admire! The desire to have these beauties around our homes is therefore natural, and in the case of many of them, it is quite feasible and will yield genuine delight for years.

The right time to transfer these wildlings from their native woods to the garden is not when they are in bloom, but when their year's growth is perfected, which, in the case of those named in this article, will be near the end of July. Of course, care will be taken by all intelligent lovers of wild flowers, not to be reckless in digging up so many as to practically exterminate them in any one locality, where they have been known and looked for, by old and young, for generations.

Nevertheless, all who have room in their gardens should, by all means, try a few of these harbingers of spring and early summer, for in our homes there is always one or more not able to go to the woods to see them.

Most of these beauties delight in a soil with plenty of rotted leaves or humus in it, and nearly all of them like a partial shade.

The accompanying illustrations are from photographs of plants growing in my garden last spring and summer.

Mr. Alexander's Specimens of Hepatica triloba

HEPATICA TRILOBA

The first of these that I would recommend is the well-known hepatica, *Hepatica triloba*, or the *Anemone Hepatica* of some botanists. This, I consider, is the earliest flower, after the skunk cabbage, to turn its face heavenward. This plant is found in the woods of Canada throughout a very wide area. Among dead leaves and undergrowth, of the past year, it forms dense patches with its own rusty looking leaves which have remained over the winter, I suppose as a protection to the young and bold flower buds. The new leaves are not formed until later; in fact, not until the flowers are all gone. Hence the wisdom of not moving the plant until this leaf growth is completed. Its flowers are faintly fragrant and are blue, pink, white or purple in color.

Although, necessarily, the hepaticas must lose some of their charm when taken away from their woodland retreat

Trillium Grandiflorum in Mr. Alexander's Garden

they are still excellent in cultivation, and their foliage is attractive at all times. It is best to plant them in groups of from 6 to 10 plants if possible, where they will not be disturbed.

SANGUINARIA CANADENSIS

The next plant I would commend, as deserving a place in the garden, is the blood-root, *Sanguinaria Canadensis*. This flower has the purest white color of any plant known. Each flower comes out of the cold, moist earth wrapped securely in its own pale green leaf, and this leaf is not unrolled until the flower is strong enough to bear the light and winds. The flower falls apart so easily that when in full bloom it will scarcely bear transportation, but with a touch the stem stands naked—a bare, gold-tipped sceptre, amid drifts of snow. It is one of the most shy of wild plants, easily banished from its locality by any invasion, but it takes to the garden with the most perfect readiness, doubles its size, blossoms earlier, repudiates its love of water and flaunts its great leaves in its unnatural confinement. I have two colonies of this flower in my garden, planted about 15 years ago, and it has increased both by ordinary increase of the roots, and by seed, and in a dry and sandy soil, the very opposite of that in which it seems to thrive best in a wild state. It seems throughout a contradiction, the purest white flower, from a root so bloody red, that the Indians use it for staining their baskets; and it was used in old times for staining their faces.

Anemone Pennsylvanica

CLAYTONIA VIRGINICA

The wild flower I would next speak of is the spring beauty, *Claytonia Virginica*. This plant has a tenderness and delicacy of expression that is very charming. It is very delicate, and as soon as picked it fades. I have had it blooming in a shady nook of a rockery for years. It rises from the ground by a stem like a thread, connected with a tuber about the size of a pea several inches below the surface. The color of the flower is a pale pink with deeper colored veins. It is the Indian *Miskodeed*, and was said to have been left behind when mighty Peboan, the Winter, was melted by the breath of Spring. Unlike most of the early wild flowers it bears its blossoms in clusters, and opens in succession each white and pink-veined bell. It grows in moist places, and prolongs its career from the middle of April to the end of May.

TRILLIUM GRANDIFLORUM

The white trillium, sometimes called the wood lily, is so well known that little need be said about it. Too much cannot, however, be said about its peculiar adaptability to the perennial flower border. If the tubers are dug up in late summer, or early fall, and planted in soil as recommended above, a good crop of flowers will delight you. The next spring, and year after year, they will increase in number and size. A single tuber planted many years ago near a cedar hedge has so increased that last year there was a dense cluster of 10 flowers. All these early wild flowers are most satisfactory when several are planted in a group. In a circular space of, say, two feet in diameter, 10 or 12 tubers might be planted. In a few years these would appear as shown in the illustration, which is reproduced from one of several groups in the garden.

ANEMONE THALICTROIDES

Another very sweet little flower is the Rue anemone, which is found growing around the roots of large trees in open woods, and often in company with the wood anemone or wind flower, *Anemone nemorosa*. Unlike its companion which bears only one flower, the Rue Anemone has a cluster of flowers at the top of a slender stem, with a whorl of leaves under them like the leaves of meadow rue. Its root is a cluster of small tubers, and looks like a very miniature dahlia root.

ANEMONE PENNSYLVANICA

The Pennsylvanian anemone is a very common one, and is found growing at the borders of woods, and on the sides of railway embankments and ditches. It is usually found in patches, and forms a very showy addition to the hardy garden. It spreads by underground runners, and if allowed will soon monopolize the surrounding area. It continues to bloom for two or three weeks, and is a very striking object. The cut represents only a section of the mass, all from a single root planted a few years ago. It requires no looking after except to keep it within due bounds.

All the above, if planted as indicated, will be a source of pleasure for years to those interested, and will be admired by all flower lovers. It is not difficult to start them and very little work is entailed in looking after them.

Spring Beauty

Charming Display Throughout the Season

FOR a succession of bloom from early spring until late fall it would be difficult to obtain a better effect than appears in the beautiful garden of Mr. H. Spencer Case, of Hamilton. Diligent and intelligent work throughout the year results in an attractive floral panorama from March 15 until October. Every inch of space is made use of, and by studying the season of bulbs and various perennials a perfect succession is maintained from the time the snowdrops and crocuses appear until Jack Frost nips off the hardiest perennials in the fall.

"In early spring," said Mr. Case to a representative of THE HORTICULTURIST who called on him, "snowdrops are the first to appear. Then Scilla Siberica comes along. After these about 2,500 crocuses of different color make a brilliant display. Over 400 hyacinths are done blooming by the end of May. Narcissus and tulips, too, are in evidence from late April until early June.

"Perennials of different kinds, including columbines, oriental poppies, globe flowers and Lilium candidum come in during June. Altogether, there are about 450 varieties of roses, many of which have been imported from Ireland. Climbers decorate the fences and verandas. The crimson rambler and many kinds of clematis produce a brilliant effect during June. In July gladioli of all shades and Lilium aratum are most in evidence. Lilium speciosum and a second crop of gladioli brighten the garden in August. I make four plantings of the gladiolus bulbs, the first early in May, and the succeeding plantings at intervals of 15 days. They are put in amongst the shrubbery and roses about four inches deep, wherever a space as large as a silver dollar is left, and in this way bloom is had from the last of July until the middle of October.

"I do not pay attention to annuals," continued Mr. Case, "because they die down too frequently and leave too many bare places. The perennials, when established, are there to stay. If I had more space I might have some of the annuals as well."

CULTURAL METHODS

"In the fall," remarked Mr. Case, "I apply a mulch of straw about six inches deep as soon as the ground freezes. I have tried many kinds of mulch but prefer the straw to leaves, manure or other mulches frequently used. The objection to many mulches is that they mat down closely after heavy rains and hold the heat that is being given off by the earth, so that the bulbs are induced to grow. When growth is started prematurely the bulbs die again underneath the mulch and become blanched. I have seen beds of bulbs that were covered with leaves, where growth was induced in this way, and when the mulch was removed early in March, new leaves four inches long were lying flat along the ground. With the straw this growth pushes its way straight up, and when the mulch is removed growth continues. Manure, besides being too heating, is objectionable on account of the unsightly appearance and disagreeable odors.

"When the straw mulch is removed in March I put on a sprinkling of powdered sheep manure and bone meal. A surface dressing is all that can be given, because the bulbs are so close together that no digging can be practised. The sheep manure and bone meal contain nitrogen and phosphates, and the rains wash these fertilizing substances into the soil readily. In April I fork around the rose bushes and loosen the earth wherever I can. When the foliage appears in May I look out for the rose caterpillar which is very troublesome in my garden. The only way to conquer it is to pick it off. The aphis can be held in check by spraying with nicotine and whale-oil soap. If the fight is begun in time three sprayings suffice for the season. I use about a tablespoonful of nicotine and one-quarter pound of whale-oil soap to three gallons of water. As the aphis have to be killed by contact, special care must be taken to apply it to the under sides of the leaves where the aphis collect. Paris green is liable to kill the foliage on roses. Helebore is the best poison to use for those insects which eat the leaves. It is just as effective as Paris green and does not do any damage to the plants.

"Mildew appears now and again, the date of first appearance depending on the season. It sometimes attacks the rose bushes in July, while other seasons it does not appear until much later. Powdered sulphur dusted on the plants gives satisfactory results. If the mildew has not obtained too firm a footing it will at least check the disease. In case this fungus is well established it is advisable to cut off the branches that are most affected and burn them. The conditions that result in rapid development of this trouble are cold, damp weather with sudden changes to warmer temperature.

During July and August there is not much to look after except watering and keeping the weeds and other objectionable growths from amongst the flowers. In September, Lilium candidum should be planted. In October crocuses, tulips, hyacinths, etc., should be put in. These bulbs can be secured from any reliable seed house, and may be planted around the edges of the beds or under the shrubbery. A rich soil is not required, because sufficient food is stored in the bulb to support it until it is matured. Lilium aratum does not thrive well in a strong soil. This bulb is a failure

Mr. Case's Tulip and Hyacinth Display last May

with many growers because they treat it too well, It seems to grow quickly until about 8 or 10 inches high when it is in rich soil, but then the leaves die down before any bloom is given. Most of the other liliums, however, do well in moderately rich soil.

"Bulbs should not be covered too early in the fall. I generally put on a mulch about November 20, or after the ground is frozen hard enough to carry a person. If covered before the frost is in the ground growth starts and the tops become heated. When this occurs they do not mature satisfactorily."

SPARROWS DESTROY CROCUS

"Sparrows," said Mr. Case, "seem to be very fond of yellow crocuses, but they do not attack those of any other color. I have experimented by sprinkling bitter aloes on the bloom, and this has worked to perfection. The sparrows would pick at the bloom, but then step back and shake their heads and wipe their bills and fly away. Before I applied this remedy they had destroyed the petals of many of my best specimens. They seemed to want to get at the very heart of the flower. I like to harbor sparrows around my place, because they pick up many insects on the roses and other plants, but like many other beneficial animals, they have their faults. A mere sprinkling of powdered aloes on the petals of the crocuses, however, prevents them from doing any damage to these plants. The aloes can be applied readily with a small blower."

Roses and Lilies in the same garden in July

The accompanying illustrations of Mr. Case's garden give but a faint idea of what can be done with flowers by an industrious business man who has sufficient love for nature's beauties to spend a short time each day in his garden.

How to Succeed with Roses

NO collection of shrubs and flowers is complete without a few roses. Many gardeners plant a few of the common varieties, but lack of care and want of proper soil and attention results in a poor showing after they are in the garden a very few years. The rose-bed must be specially prepared, and the soil should be rich and mellow. Many of the varieties are tender, and will not thrive in northerly latitudes. Some of the half-hardy specimens can be grown with success if special protection is given to them during the winter. Special care, however, must be exercised in selecting varieties for planting in the different localities. At Tillsonburg, Mr. Geo. W. Tillson has had a fine display of roses for many years.

"In preparing a place for planting my roses," said Mr. Tillson to THE CANADIAN HORTICULTURIST, "I dug a bed 12 or 14 inches deep and carted the soil away. This was filled with a mixture of one-third cow manure, one-third rich soil from underneath a rich sod pasture, and one-third rich sandy soil from an old garden. In this way a permanent bed was made, and the quality of the roses can be maintained for many years. Fresh fertilizers are not required every season. I had a circular bed eight feet in diameter, and a rectangular one 40 by 4 feet. The roses did well in these beds for four years. A dressing of coarse manure from the horse stable was put on each fall.

"With the average grower hybrid roses give the greatest satisfaction. They do not need so much manure, and will give better results with less attention. Tea roses require liquid manure, and soon play out. The hardy perpetuals run out in four to six years, and if planted in rich, well-prepared soil, they will last for that length of time without any special fertilizer. When they begin to deteriorate the bushes should be torn out and burned. No rose grower should be without some of the ramblers. Both the yellow and the crimson do well, but the yellow varieties need more protection from the cold. In cold sections it would be as well to confine the selection to crimson rambler and some of the best hardy perpetuals. La France is one of the most beautiful hybrid tea roses, and will endure more cold than most others of that class.

"In buying a collection, unless special care is taken in the selection, and unless the purchasers know what varieties will succeed well in that locality, it will be found that almost 50% will be lost during the winter. For this reason it is well to buy in large lots and get a few more than are required to fill the space. They should be secured from some reputable greenhouse man who understands the propagation and handling of roses. I bought most of mine from The Webster Floral Co., of Hamilton, and was well satisfied. I would not recommend amateurs to try propagating them at home, because this work should be left to an expert, and an amateur would not save enough to repay him for his labor. Hardy perpetuals average only about 75 cents for a good bush, while the teas and hybrid teas can be had at 10 to 25 cents each, according to age. The ramblers can be had at even a lower rate."

PRUNING AND PROTECTION

"In pruning," remarked Mr. Tillson, "my plan has been to cut off close in the fall, and cover the bed with light, strawy manure. I usually cut off the canes to about 12 to 16 inches long after

Roses as Grown in the Garden of Mr. W. G. Black, of Ottawa

the first hard frost comes. When trimmed in this way the tip always dies back about four to six inches. Tea roses have withstood the temperatures of mild winters without any protection, and have come out in the spring in good condition. These and the ramblers require pruning only to give shapely appearance. The ramblers, as a rule, cease to give number one bloom after two years, but it is such a strong grower that plenty of new wood comes each year to allow the old wood to be cut out. In this way the best of the new wood can be left each season.

"With the tea roses a vigorous growth of wood and foliage cannot be produced without causing an abundance of bloom. For this reason the plants belonging to this class require an enormous amount of fertilizers. In some of my beds I have made a small trench around each bush, and applied about a pint of liquid manure each day. If well fed in this way both the quality and the color of the bloom are much improved.

"For protecting tea roses the bushes should be set 12 to 14 inches apart. In the fall the beds should be boarded around with boards about 12 inches wide. Straw should be put in around the plants and also over the top of slats placed over the top to prevent the snow from weighing down too heavily on the roses. The slats also keep the straw from being packed down tightly. I usually fill in the straw even with the top of the boards. All of the best bloomers suitable for garden culture will stand the average Canadian winter with such protection. This mulch should be removed in the spring after the heavy frosts are over. I usually take the covering off about the time garden operations commence. It is not wise to uncover the bushes too early."

ROSE ENEMIES

"Roses," continued Mr. Tillson, "have some insect enemies that are very difficult to fight. The rose chaffer and the aphis, or green fly, are very troublesome every season. In my garden I have no trouble with fungous diseases. For the chaffer nothing but hand picking is effective. They attack only the blossom, and would spoil a bloom before a poison had taken effect, even if the strongest poison were used in great quantities. I frequently have picked a pint or more of these pests at noon, and by six o'clock as many more had appeared on the bushes. They do not bother roses that are not fragrant. The more perfume a rose gives the more serious is the trouble from these pests. I have never seen these insects on the rambler roses. The aphis can be successfully combatted with kerosene emulsion or with tobacco water."

Horticultural Societies and the Children

HORTICULTURAL societies can make their efforts count for much in beautifying the town or city home surroundings, but for engendering a love for plants and flowers no more valuable step can be taken than to distribute seeds and plants among the school children. Several societies in Ontario have done this during recent years, and many purpose doing so for 1906. Through the children the parents and friends are interested. Pleasure given the child, gives pleasure to the parent; and although it may appear that the labor and trouble along these lines with young people may not be resulting in as much good as we think they should, in the majority of cases it is time well spent for the society as well as for the children.

Some of the best ways of accomplishing this work have been outlined for THE HORTICULTURIST by Mr. Wm. Hunt, of the Ontario Agricultural College, Guelph, who has started and helped many horticultural societies in this work. "First of all try to interest the governing bodies of the city, town or municipality and school boards in the work," writes Mr. Hunt. "Above all, get the school teachers interested. I have never yet seen a failure in any class or school where the teacher or teachers were interested. No better medium for this purpose can be found than by a few enthusiastic and tactical members of horticultural societies getting in touch with the teachers and securing them as members of the local society. This done, the remaining work is comparatively easy as they will cooperate with the members of the society and bring all their persuasive influence to bear on the members of the school board so as to get united and interested action.

"With the introduction of nature study, school gardening, etc., in the curriculum of our schools as at present decided, by the way, an introduction that should have the endorsation of every true Canadian who has the truest and best future interests of our grand country at heart—it should be no difficult matter to interest school boards and school teachers in this work. While lecturing to classes of school teachers from all parts of the Dominion, who are taking a course in nature study, school-gardening, etc., on the culture of plants and flowers, I have been more than delighted at the close interest shown in the lectures and in the practical demonstrations. Those who wish to begin in this good work, should confine themselves at first to something simple and easy of whatever form it may take, so that the young plant grower can attain some degree of success at the first attempt. 'Nothing succeeds like success,' and by giving the young people something to do that they can succeed with, it will encourage and stimulate them to attempt still greater achievements, whilst on the other hand the attempting of anything too elaborate might end only in disappointment, failure, and perhaps disheartenment.

"Another point is to endeavor to issue with the seeds, plants, etc., distributed, a printed bulletin or paper, giving implicit and detailed instructions

as to culture and care of the same. This method intensifies the interest and awakens in the scholar the idea of being closely observant as to results, one of the principal factors necessary to success, and one that helps materially from all points of view.

BRANTFORD'S GOOD WORK

Excellent work of this nature has been done by the society at Brantford, Ont. It is described in a recent letter to THE HORTICULTURIST by Sec. R. Walter Brooks, whose letter reads as follows: "Our society, in 1903, held an exhibition of fruit, flowers and vegetables which was a failure, financially.

"In 1905 we distributed about 6,000 packages of seeds, including asters, scabiosa, verbena, salpiglossis and Phlox drummondi. A package of each was given to any pupil desiring them. The exhibition took place in the fall, when we distributed about 125 plants and 500 hyacinths as prizes. Every exhibitor who did not get a plant was given a bulb. It was one of the most successful exhibitions ever held here, although we made no charge for anything.

"This year we are starting out on the same lines, but more extended. The seeds selected are asters, scabiosa, verbena, zinnia and nasturtium. We did not consider that the children were successful with phlox and salpiglossis, hence the change. We have 8,775 packages ready for distribution this year. These include one ounce of asters, 150 packets with 100 seeds per package; one ounce of verbenas, 220 packets with 60 seeds per package; one ounce of scabiosa, 200 packets with 25 seeds per package; one pound of nasturtium, 355 packets with 10 seeds per package; one ounce of zinnia, 140 packets with 25 seeds per package.

"Papers have been distributed to the public and separate schools asking for the names of all those desiring seeds. I have 1,407 names from the public schools. The separate schools have not returned theirs yet. The officers and teachers of the schools render us all the assistance possible in getting the names and distributing the seeds."

SIMCOE CHILDREN INTERESTED

In the town of Simcoe, Ont., the horticultural society considers its work among the school children about the most valuable it undertakes. The chairman of the committee having charge of this work, Mr. Henry Johnson, has written THE HORTICULTURIST as follows: "We commenced giving seeds to the children of our public schools in 1904, giving them that year, asters, nasturtiums and pansies. In the fall we had an exhibition, but did not offer prizes. There were 125 entries. The understanding was that only flowers grown from seeds given by the society should be shown.

"Last year we distributed the same kinds of seeds, but the children were told that flowers grown from any other seeds might compete as well. Our show was held in September and was a great success. There were 440 entries made by about 125 pupils. We had as high as 30 entries in a section, and judging was quite a task. Prizes to the value of $50 or $60 were awarded. They consisted of bulbs, seeds, plants and garden literature, donated by some of our members. Prizes were won by 54 children, some of them getting several.

"This year we gave them asters, phlox, verbenas and zinnias. About 230 of the pupils of the public school asked for seeds and we gave them about 650 packets. We bought only the best seed, got it at wholesale and put it in packets ourselves. The direct benefits from the distribution of seeds to the children in this way are apparent."

Returns from One Season's Work with School Children

Tomatoes on Sod Land

W. C. McCalla, St. Catharines

We are considering planting tomatoes on a piece of new ground, sandy loam, which has not been plowed for 15 years. Will tomatoes do well on such land, if it is plowed early and cultivated?—(Subscriber, Collingwood.

I would advise you not to attempt to grow tomatoes this year on such land. Had the old sod been plowed last fall, a large amount of work this spring with disk and drag harrows might put it into fair shape for tomatoes. I would, however, much prefer to give a heavy dressing of manure, plant corn this year, and it would then be in fine condition for tomatoes in 1907.

BULB DEPARTMENT

Questions answered by Mr. Herman Simmers

Bulbs for Spring Planting

What common bulbs should be planted in the spring? What soil conditions are most desirable, and at what time of the season should they be planted? In what month or months do spring-planted bulbs bloom?—Subscriber, Owen Sound.

There are a number under this head. We will include corms, rhizomes, tubers, etc., in case Subscriber may not be aware of the exact term. All the bulbous appearing plants when dry have the appearance of bulbs, and this leads many people to think they are actually bulbs, whereas the actual botanical difference is very great, although the results are somewhat the same. To answer this question I will simply call them all bulbs, as is the usual custom.

The list includes: Tuberous rooted begonias, double and single flowering, amaryllis, cannas, dahlias, gladioli, liliums, caladiums, callas, gloxinias, hyacinths, candicans, tuberoses, oxalis, tigridias.

In most cases the soil conditions are a well enriched sandy loam. The time of planting should be April and May. The flowering period continues from July until frost takes them off.

Eastern Ontario Vegetable Growers Organize

Thomas Delworth, Weston, Ontario

HAVING spent a few days among market gardeners in some of the leading vegetable growing sections of Eastern Ontario for the purpose of organizing branches of the Ontario Vegetable Growers' Association, a brief outline of my trip may be of interest. Associations were formed at Ottawa, Kingston and Napanee.

I arrived at Napanee on March 23 and hunted up the vegetable growers. There are not many market gardeners here, but there are a large number of farmers engaged in growing vegetables for the canning factory. These men I found to be nursing a very sore grievance. The canning factory has been running only one season, and I was informed that about the middle of the tomato season, at the heaviest picking, the factory refused to accept delivery. These growers had no other outlet for their crop. One grower told me he turned his cows into his tomato patch; others allowed them to rot on the ground. I believe the factory people claim that since it was their first season their plant was in a partly unfinished state, and the crop came in faster than they could handle it. This year, with a completed plant and better equipment, they expect no trouble. However, the loss last year seems to have fallen entirely on the growers (as usual), their contracts with the factory apparently allowing them no redress, and it is not surprising that some of them are feeling disgusted.

I met a number of the growers at the town hall, and after talking matters over and explaining the objects of the Ontario Vegetable Growers' Association, they organized a branch and elected Mr. Vandebogart president; Mr. Thompson vice-president, and E. M. Sherman secretary-treasurer.

At Kingston I found that several were engaged in market gardening, growing vegetables for the Kingston market. Almost all decided to come in with us. I held two meetings to discuss the matter with them. At the second, for which Mayor Mowat, of Kingston, very kindly permitted us the use of his private office in the city buildings, a branch association was formed, with Robt. Bushell, of Williamsburg, president; Richard Baiden, of Portsmouth, vice-president, and C. H. Adair, of Cataraqui, secretary-treasurer.

Ottawa came next in order for organization. The growers have plenty of greenhouses. I visited several of them, including those of Robt. Bailey and H. C. Fentteman, of Ottawa South, and Frank Williams, of Billings Bridge. Mr. Fentteman was cutting cucumbers, White Spine, March 29. He showed me an arrangement of angle iron on his greenhouse plate for the bottom pane of glass to butt against, preventing splitting by ice, that I consider an excellent device.

At Mr. Williams' I saw the largest greenhouse devoted to growing lettuce I had seen since leaving Toronto. He has a large house, 40 x 150 feet, and two others slightly smaller. The large house and one of the smaller ones are in lettuce, and the other devoted to bedding plants. The lettuce is Grand Rapids grown, mostly on solid benches, producing a first-class article.

Mr. Williams is a noted grower of the famous Montreal Nutmeg melon—that aristocrat among melons that so many have tried in vain to produce satisfactorily. He kindly explained to me his system of handling them; first starting the plants in berry boxes in the greenhouse, then setting them out in the field and putting cold frames over them until settled warm weather, then removing the frames and letting them run. Some of these melons are sold in Ottawa and some shipped to the U.S., and some to Toronto, selling for about four times the price of our local-grown melons. I am not an expert melon grower, but my own impression is that the extraordinary quality in flavor for which these melons are so famous is more a matter of soil and location than variety or method of culture, though the latter probably have something to do with it.

Before leaving Ottawa we held a meeting in the Market Hall, at which a branch association was formed, with Mr. Williams president; Mr. Fentteman vice-president, and T. Mockett, of Billings Bridge, secretary-treasurer.

From Ottawa I went to Montreal, Mr. Williams, the newly-elected president of the Ottawa branch, accompanying me. While in Ottawa I met Mr. Monk, M.P. for Jacques Cartier, who, with his usual kindness and courtesy, gave me a letter of introduction to Mr. Camille Légaré, Cote des Neiges, Montreal, one of the largest growers of greenhouse vegetables in Canada. His greenhouses were a revelation. I had heard of them at home, but "the half had not been told." Mr. Légaré was away when we arrived, but his son showed us around the place.

The first range of houses we entered comprised 13, each 20 by 125 feet, built en bloc. The outside walls were about seven feet high, centre gutters about the same from the ground, allowing free and open passage from house to house, 1¼ inch pipe purlins and supports, and one inch pipe cross-ties connected with the purlins by Ts, and drawn together in the centre by R and H couplings, preventing spreading and avoiding the necessity of ridge supports. Hot water heating, overhead flow, principally 3½ and 4 inch is used, with underbench returns mostly two inch. Ventilators at the ridge are mostly King apparatus.

Two of these houses were filled with parsley; two were devoted to flowers, chiefly carnations; one or two were filled with watercress, radish, etc. The rest, or fully half the range, were in lettuce, some on raised and some on solid benches. Everything looked fine. The next range, comprising two houses, 50 by 200 feet, and 50 by 250 feet, respectively, was entirely devoted to lettuce, all grown on solid benches or, more correctly speaking, no benches at all. The crop was simply planted on the level ground. These immense houses are built end to end, allowing them to be detached at the sides, the walls being built high enough to allow of a row of sash ventilators being built in them. A row of large ventilators at the ridge completed the ventilating arrangements, those at the ridge being operated by an apparatus worked by an endless wire cable.

The lettuce grown in these houses is Grand Rapids, planted about seven inches apart. Some of it was being cut and packed while we were there. It was about 15 or 16 inches high, with large, heavy heads, quality excellent in every way, selling, I believe, for 60 to 80 cents per dozen wholesale in Montreal.

As we were finishing our inspection Mr. Légaré returned and gave us a very cordial welcome. The main object of our visit to Montreal was to induce the Montreal and Quebec growers to form an association for themselves on somewhat the same lines as ours in Ontario. We discussed the matter with Mr. Légaré at length, and he was confident that something can be done in the matter about September.

Getting back to general discussion again, Mr. Légaré informed us that he planned to erect about 25,000 feet more glass this summer, and as Mr. Williams is planning a new range of houses, too, we were very soon all knee deep in a discussion of different methods of construction.

The concensus of opinion seems to be that while raised benches may suit very well for winter months, yet, to produce a first-class article of head lettuce, even of the Grand Rapids variety, solid ones are much the best. At each of the points I visited the growers showed great interest in the work that is being done by the Ontario Vegetable Growers' Association, and were surprised to hear what the association already has accomplished.

Ornamental Beds of Hardy Grasses

HAVING had several letters from readers of THE HORTICULTURIST, enquiring as to the best varieties of hardy grasses to plant in beds on the lawn and the position in which they should be placed, I submit the following: The varieties mentioned should be planted in circles, one around the other, and having a common centre, the whole making a round bed. Numbering the circles from the outer edge, or grass margin, the distances apart for large or small gardens for good results would be as follows:

No. one is six inches from the grass margin and planted thick to form a mat. No. two is eight inches from No. one and planted six inches apart in the row. No. three is eight inches from No. two and planted six to eight inches asunder in the row. No. four is 10 inches from No. three and planted six to eight inches apart in the row. No. five is 12 inches from No. four and planted eight inches apart in the row. The centre plant will cover two feet in diameter.

Thymus vulgaris coccinius may be planted in No. one. This plant forms into a dense mat or cushion, and is covered with scarlet sweet-scented flowers during the summer. It holds its foliage during the winter, and turns to a beautiful bronze purple color on the approach of cold weather.

The second row I would make almost white. To get this color plant it with Poa trivalis alba vittata, a beautiful, hardy, variegated grass that grows about four inches high. Clip the flower stalk off.

The third row or ring plant with Armeria, va. cœspitosa sea (Pink, Thrift). It forms dense cushions of green or grass-like leaves, and throws up numerous wiry stems all summer, producing bright rose-colored flowers.

The fourth row or circle I would plant with Festuca glauca, Fescue Grass. This is often grown as an ornamental grass in conservatories, and few know what a grand bedding plant it is. It is as hardy as an oak tree, and has bluish-green leaves. It grows about six inches high.

The fifth row plant with Arrenatherum bulbosum folia variegata. It is a pretty, bright, variegated grass, growing in tufts, one to two feet high, and quite hardy; not common.

The sixth, or centre, should be planted with Eulalia Japonica zebrina (zebra grass), named zebra on account of the yellow stripes or bars across the leaves. This plant grows to five feet high, and is the best of the Eulalias, of which there are a number of varieties, natives of Japan. The above arrangement makes a very ornamental bed.

Vegetable Diseases

THE CANADIAN HORTICULTURIST has obtained the following information from Professor Lochhead, of Guelph, in regard to several points debated at recent meetings of the Toronto Branch of The Ontario Vegetable Growers' Association.

ONION SMUT

This is one of the most widespread diseases of onions, and every year does a great deal of damage. In every case it is well to practise a rotation of crops, for smut spores may live several years in the ground. Where possible and practicable the transplanting of the seedlings of onions will bring about a crop that is smut-free. It has been found that the young plants are attacked during the early part of their seedling stage soon after they germinate, and if the seedlings can be grown in soil that is smut-free there is very little risk of their being inoculated after being transplanted.

Many growers of onions, however, object to the transplanting idea and maintain that it would not pay. Nevertheless, some of the New York onion growers have taken to transplanting and find that it does pay in bigger yields and in little smut. The New York Experiment Station obtained very successful results by spraying a mixture of sulphur and air-slaked lime in the drills with the seeds. They used 100 pounds of sulphur and 50 pounds of air-slaked lime per acre. This material was sprinkled in the rows along with the seed and very successful results were secured.

CORN SMUT

Corn smut may remain for several years in the soil and when present is liable to infect young corn plants. It differs from the smuts of wheat, rye and oats in that any portion of the young corn plant can be inoculated at any age where growing tissues are present. While it may be of advantage to treat seed corn with formalin before planting, such treatment will not prevent the smutting of corn.

As it is impossible to spray the young corn plants for the prevention of this, the only thing left to the grower is to remove the boils of smut as they appear, and destroy them. Careful attention along this line from year to year, and a rotation of crops will do much to lessen the ravages of this trouble.

THE BLACK SPOT ON BEANS

Bean anthracnose appears first as small dark spots usually bordered by a line of purple. The spots gradually increase in size, run together, and form large irregular blotches, that produce depressions in the pod. It sometimes attacks the stems. The method that has been adopted on a large scale with considerable success is to soak the seed in formalin solution for an hour and a half, (this solution is made by dissolving one-half pint of formalin in 15 gallons of water) and when the plants are two or three inches high, to spray with the regular Bordeaux mixture, 4-4-40 formula. The spraying should be repeated twice or three times at intervals of 10 or 12 days.

ASPARAGUS RUST

It is interesting to observe the opinions of different experimenters regarding the treatment of Asparagus Rust. The Germans recommend the burning of the affected asparagus plants late in the autumn after the plant has laid its stock of food for the season. The Connecticut, Massachusetts, Vermont, and New Jersey Station experimenters recommend the same treatment. A Rhode Island experimenter later questioned the advisability of burning the brush in late summer. As late as 1900 an Iowa experimenter recommended burning as undoubtedly the best method of preventing the rust. Whatever views we may hold regarding the importance of this treatment, asparagus plants should be carefully cut and burned at the end of the season. It is possible, however, that at this time many of the spores have fallen from the plants.

Good results were secured on a large asparagus plantation in New York State by spraying with the Resin-Bordeaux mixture. The sprayings were made August 5 and 17, and September 1. The Resin-Bordeaux mixture was prepared by first making the Bordeaux mixture in the usual way, and adding two gallons of stock solution of resin for every barrel of the Bordeaux. The stock resin solution was prepared according to the following formula: resin 5 pounds, potash lye 1 pint, fish oil 1 pint, and water 15 gallons. The whole should be boiled until the solution will mix with cold water, forming an amber-colored solution.

Celery Blight is due to a fungous disease that can be controlled by spraying with Bordeaux mixture. At the Central Experimental Farm we have had excellent results by keeping the plants covered with Bordeaux mixture from the time they are set out until autumn. Most injury occurs in dry weather. The usual formula for Bordeaux mixture is 4 pounds sulphate of copper, 4 pounds lime and 40 gallons of water. This should be applied in a fine spray.—W. T. Macoun, Ottawa.

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TORONTO, CANADA

THE FRUIT DIVISION

In view of the action Hon. Sydney Fisher considered it expedient to take at the recent Dominion Fruit Conference, to avoid giving an explanation of his reasons for placing the Dominion Fruit Division under the control of the Dairy Commissioner, it is well that the views of the fruit growers in regard to this matter shall be made known more fully than has yet been done. At the outset it may be well to repeat that the discussion of this matter does not bear on the capabilities of the present dairy commissioner nor of the chief of the fruit division, but only on the principle that is involved.

The main reasons that have been advanced by Hon. Mr. Fisher for the present arrangement are that the problems relating to the fruit industry that can be handled by the Dominion Department of Agriculture, bear practically entirely on the marketing and transportation of fruit, and as the markets and cold storage divisions of the department have always been under Mr. Ruddick, it is, therefore, a matter of convenience in the department that the fruit division, also, shall be under his charge. It has been claimed, also, that as the fruit division had previously been under Prof. Jas. W. Robertson, practically no change was made in its status by leaving it under the dairy commissioner. Dealing with this last contention first, it can be stated positively that the cases are not analogous. Prof. Robertson was not known as the dairy commissioner, but as the "Commissioner of Agriculture," in which capacity he was in charge of not only the dairy and fruit divisions, butt of the live stock, seed and marketing divisions as well. To all intents and purposes he acted in the capacity of the Deputy Minister of Agriculture. When he retired the live stock division was continued under an independent commissioner. An independent commissioner was appointed for the seed division. This was the case, although the complexity of the questions relating to that division are not to be compared with those connected with the fruit industry. The fruit division, however, was placed under the dairy commissioner, a man who knows practically nothing about the growing and handling of fruits.

By this arrangement the chief of the fruit division, no matter how capable he may be, is forced to submit everything of importance relating to his work to a man who (being a dairyman by inclination and training) is naturally more interested in dairying than in fruit growing and who, as already stated, knows practically nothing about fruit growing. Should the dairy commissioner not give his approval to the prosecution of any certain line of work that settles it, as the chief of the fruit division has no right to confer direct with the Minister of Agriculture. In other words, the fruit growers, through their recognized representative in the department, are cut off from conferring direct with the minister. By this arrangement the minister gives reason for the belief that he considers the fruit division of very minor importance

That this is his opinion is further indicated by his claim that the only questions relating to the fruit industry that his department can handle properly are those concerning the marketing and transportation of fruit. This contention on his part shows how little he appreciates the importance of the fruit industry. The result of the recent fruit conference should have enlightened him somewhat on this point. There is no reason why the work of the fruit division should not develop until it becomes one of the most important branches of the department of agriculture.

In the first place the staff of fruit inspectors needs to be considerably enlarged and the Fruit Marks Act enforced more stringently than it has been. A monthly and, during the summer and fall months, a semi-monthly crop report should be issued that would deal with crop conditions not only in Canada, but in the United States and Europe as well. If necessary, a special clerk should be placed in charge of this work. The cooperative growing and marketing of fruit is only in its infancy, and is a matter that properly falls under the control of the Dominion Department of Agriculture. To ensure our fruit being marketed in better condition more of these associations should be formed and they should be assisted, in various ways, in finding a market for their fruit both at home and abroad. In Nova Scotia, Ontario and British Columbia efforts in this direction have been more or less successful. Each province could learn by the experience of the others, but almost nothing has been done by the fruit division to promote this work. No better men to undertake it could be found than the fruit inspectors who might be utilized during the seasons when their work is slack.

The package question is a serious one. Each province has certain packages, and the lack of uniformity is injurious to the trade. The barrel question has been settled in part, but it is only one branch of the subject. There should be more harmony in this matter, and the fruit division should set to work to bring it about.

The development of interprovincial trade, the inspection of conditions relating to the sale of fruit on commission, the inspection of nursery stock and numerous other matters require to be undertaken by the Dominion Fruit Division. They will not be pushed with the necessary vigor until the fruit division has at its head a fruit commissioner responsible to the Minister of Agriculture only. As it is now, no matter how excellent the work done by the chief of the fruit division may be, the credit for such goes to the chief of the dairy division, who is the recognized head of both divisions. This, in itself, is certain to hamper and discourage the extension of this work.

The Horticulturist is not making a threat when it states that as far as the fruit growers are concerned this is a matter that will not down. The present agitation will continue until the desires of the growers are met. Hon. Sydney Fisher at the recent conference showed himself to be anxious to do what he could to promote the fruit industry. It is hoped that he will recognize the strength of the feeling that exists in regard to this matter, and that he will make the desired change at the earliest opportunity.

HORTICULTURAL SOCIETIES' ACT

The new act governing horticultural societies, recently passed by the Ontario Legislature, places the horticultural societies of the Province on an entirely new basis, and should lead to a great extension of their work. The old Agricultural and Arts Act, under which the societies have received their grants in the past, has been very unsatisfactory. Horticultural societies had to share the government grant for the district in which they were organized with the agricultural societies in the same district. The number of agricultural societies in the section determined the size of the grant the horticultural societies received. The value of the work they were doing was not taken into consideration.

The effect of this, in many cases, was to create enmity between the officers of the agricultural and horticultural societies. In many counties the influence of the officers of the agricultural societies was sufficient to block the formation of horticultural societies in centres where they were greatly needed. In other cases, where the officers of an agricultural society were afraid, a horticultural society might be established, and the government grant to the agricultural society thereby reduced, a few of them formed themselves into a dummy horticultural society, drew the grant to the horticultural society, and turned it into the funds of the agricultural society.

Under the new act, which will come into force the first of next year, this is all changed. Horticultural societies have been placed on a basis of their own and, anticipating that there will be an increase in their number, the government grant has been increased from about $6,400 to $8,000. In future societies will receive their grants in proportion to the amounts they expend for horticultural purposes. This will lead to a reduction in the grants of a few societies that have been receiving grants that were above the average, while societies like the one at St. Catharines, which last year expended ten dollars for every dollar it received from the government, will be assisted.

The formation of dummy societies to help agricultural societies will not be possible. A city society will not receive a grant exceeding $500, a town society one exceeding $200, and an incorporated village society a grant exceeding $150. Diversity of work by the societies is assured by a regulation which prevents a society from expending more than one-third of its total receipts for any one line of work A special grant of $800 is made to assist the societies in Ottawa, Toronto, Hamilton and London. The Toronto and London societies will benefit most by this arrangement as their grants under the old act were small. The main features of the act were endorsed by the members of the Ontario Horticultural Association at their convention in Toronto last November. The act should greatly benefit our horticultural societies.

Have any of the readers of The Horticulturist any back copies to sell? Since the purchase of The Horticulturist from the Ontario Fruit Growers' Association, we have been endeavoring to secure a complete file of The Horticulturist since its establishment in 1878, to date. We have nearly succeeded, but not quite. The following issues are still lacking: September, 1878; January, February and September, 1880; May 1882; March, 1886; November, 1891; and February, 1900. Should any of our readers have these numbers, we will be willing to purchase them. Should they not have these copies unbound, but have them in a bound volume, we would gladly buy these

bound volumes. It is very desirable that the publishers of a magazine should have the bound volumes of the magazine from its establishment, and we trust our readers will be able to help us by furnishing the missing copies needed to complete our file.

We have informed our readers on several occasions that it is our desire to make THE CANADIAN HORTICULTURIST the best horticultural publication on the continent. That we are succeeding is indicated by letters we receive from our readers, including the following one from Luke Brothers, Nurserymen, of Montreal, Que.: Enclosed find our subscription for another year. We take this opportunity of expressing our appreciation of the valuable magazine you are producing. We get horticultural magazines from all parts of the continent, and may say that there is none which gives us greater pleasure, or greater profit than THE CANADIAN HORTICULTURIST. We wish you continued success.

Fruit growers who have followed the debates in the House of Commons regarding the now famous shipment of apples made by E. D. Smith, M.P., to the old country, and which was so unfavorably commented on by one of the Canadian commercial agents, will feel considerable sympathy for Mr. Smith. There is no reason to believe that this shipment was made with any intention to deceive, and as it did not receive his personal supervision, it is unfortunate that Mr. Smith, whose reputation as a shipper is well known, should have been given such unpleasant notoriety in a matter of this kind.

Horticultural societies that have not already interested school children in the growing of flowers should do so at once. This line of work does not call for a great expenditure of funds, and it has the effect of gaining the interest of the children at a time in their lives when they are likely to be most benefited thereby. Some excellent suggestions are contained in the article in this issue dealing with this work. It is not too late for societies that have not arranged already to do so to undertake work of this nature this year.

It was recently announced through the press that a certain well-known firm of apple shippers had been convicted for the fifth time of infractions of the Fruit Marks Act. As the law stands, such firms cannot be fined more than a small sum. The profits they are able to make by breaking the law are greater than the fine they are likely to incur when detected. It is time the law was amended, so that crime of this nature can be prevented.

Preventing Slumps in Prices

A. B. Cutting, B.S.A., Guelph

One of the crying needs of our fruit industry is for a system of distribution that will insure a greater demand for our produce and, as a consequence, better prices. Just how to establish a well-organized system of distribution is a difficult problem to solve. It is a noticeable fact, however, that when slumps occur in the markets of our larger towns and cities, often there are small towns where fruit cannot be bought at any price.

The keynote of the problem seems to lie in co-operation. Some co-operative arrangement with dealers in small towns, by which they may communicate their needs direct to the growing centre, or indirectly through the larger dealers of the cities, would tend to lessen the difficulty. By this means the empty and full markets could be located and shipments consigned accordingly.

THE HORTICULTURIST is getting better and more interesting all the time.— John Spence, Henrysburg, Que.

The New Bill Governing Horticultural Societies

THE revision of the Agriculture and Arts Act including the new bill governing horticultural societies introduced into the Ontario Legislature by Hon. Nelson Monteith, and which has been passed, entails several changes that will completely alter the basis for which the horticultural societies of Ont. will receive their government grants. The new bill will take effect in Feb., 1907.

The sections that are of most interest to horticultural society members read as follows:

7.—The mode of organization shall be as follows:

(*a*) A declaration, in the form of Schedule "A" to this act, shall be signed by those persons (residents of the municipality in which the society is organized) desiring to organize a society under this act. In the case of a city having a population of 30,000 or over, the number of such persons shall be at least 125; in the case of a city with a population of less than 30,000 the number shall be at least 75. Societies organized in towns having a population of 2.000 or over, shall have at least 60 members, and in the case of an incorporated village the number shall be at least 50.

(*c*) The first meeting of the horticultural society shall be held during the second week in January next ensuing, of which meeting at least two weeks' public notice shall be given by advertising in one or more newspapers published in the district.

(*g*) At the said first meeting there shall be elected a pres., a 1st v.-pres., a 2nd v.-pres., and not more than nine other directors, all of whom must be members of the society in good standing, or who must become so within 14 days after their election, who, together shall form the board of directors, a majority of which board shall reside in the municipality in which the society is organized. At the said first meeting the society shall appoint two auditors for the ensuing year.

(*h*) The board of directors, from among themselves or otherwise, shall appoint a sec. and a treas., or a sec.-treas., who shall remain in office during pleasure. The sec. or the sec.-treas., by virtue of his office, shall be a member of each committee appointed and shall have the power of managing director, acting under the contro and with the approval of the board of directors.

9.—(1) The objects of horticultural societies shall be to encourage improvement in horticulture.

(*a*) By holding meetings for discussion and for hearing lectures on subjects connected with the theory and practice of improved horticulture.

(*b*) By holding exhibitions and awarding premiums for the production of vegetables, plants, flowers, fruits, trees and shrubs.

(*c*) By the distribution of seeds, plants, bulbs, flowers, shrubs and trees in ways calculated to create an interest in horticulture.

(*d*) By promoting the circulation of horticultural periodicals.

(*e*) By encouraging the improvement of home and public grounds, by the planting of trees, shrubs and flowers, and by otherwise promoting outdoor art and public beauty. (Note—This is a new clause.—Ed.)

(*f*) By offering prizes for essays on questions relating to horticulture.

(*g*) By improving and otherwise procuring and distributing seeds, plants, shrubs, of new and of valuable kinds.

(2) A society shall not expend more than one-third of its total receipts in any one of the lines of work mentioned. (Note—A new clause. —Ed.)

No society shall hold an exhibition, or offer premiums, in connection with the exhibition of any agricultural society or societies. (Note—A new clause.—Ed.)

A city society shall not receive a grant exceeding $500, a town society a grant exceeding $200, and an incorporated village society a grant exceeding $150. A newly formed society the first year of its existence shall receive a grant on the same membership basis as other societies, but in regard to the amounts expended for horticultural purposes it shall receive a grant equal to the average grant paid during the preceding year to the other societies in its municipal class. (Note—An entirely new clause.—Ed.)

10.—(1) The annual meetings of the several societies shall be held during the third week in January of each year at such time and place as the board of directors may determine. At any such meeting those members only who have paid their subscriptions for the ensuring year shall be entitled to vote.

17.—(*a*) On or before the first day of May, of each year, the officers of every society shall send to the Department an affidavit, that may be sworn to before any justice of the peace, in the form of schedule "B" annexed to this act, stating, on forms to be provided by the Department, the exact financial transactions of the society during the previous year. This statement shall set forth plainly the number of members in good standing that belong to the society, the amounts paid in prizes for horticultural productions, and the amounts expended for each of the purposes defined in section 9 of this act. This statement also shall set forth the amounts expended for officers' salaries and expenses, and for the defrayment of all other expenses legitimately incurred by the society in its work. Such moneys shall be considered as having been expended for horticultural purposes.

(*b*) Should it be found, within one year after the receipt by the Department of a society's annual statement, that an officer or officers of the society had wilfully made false returns with an intention to deceive, such officer or officers shall be liable upon summary conviction before a justice of the peace, to a fine not exceeding $100, or less than $20, or imprisonment in the common gaol of the county for a period not exceeding six months or less than two weeks.

19. An amount not exceeding $8,000 shall be subject to division among all the horticultural societies of the province as follows:

(*a*) $2,400 shall be subject to division among all the societies in proportion to the total number of members of each society in the preceding year.

(*b*) $4,800 shall be subject to division among all the societies in proportion to the total amount expended by each society during the preceding year for horticultural purposes, as shown by their sworn statement provided for in sec. 17.

(*c*) In addition to the above, $800 shall be subject to division among the horticultural societies in cities having a population of 30,000 or over in proportion to the number of members in the current year, as shown by their sworn statement provided for in sec. 17.

LARGE AND ABUNDANT CROPS are usually obtained by the grower who uses his intelligence in cultivating the soil. Intelligence and hard work count for but little unless they are combined with good tools. By using Iron Age Implements hard work is dispensed with, and larger crops are assured. A card mailed today to Messrs. J. A. Simmers will bring a Catalog telling you why these goods are better than other kinds

If any of our readers would like to purchase bound volumes of THE HORTICULTURIST for 1905, we have a limited supply on hand which we can supply for $1.25 per volume. When bound, THE HORTICULTURIST is a neat and attractive book, well worth keeping.

THE CANADIAN HORTICULTURIST has grown larger and has much improved since I was last a subscriber.—Charlotte Carroll

The Fruit Men Meet the Government

THAT was a most interesting scene which greeted the visitor to the Privy Council Chamber, when on the 23rd ult. Sir Wilfrid Laurier and his cabinet met the large delegation from the Fruit Growers' Convention, which had been appointed to carry the resolution relative to the express companies before the Government. The committee, whose names will be found to the memorial below, was enforced by 20 or 30 other delegates and members of Parliament. All were ushered into the Premier's presence by his secretary, and Hon. Mr. Fisher who was to introduce them to him, being delayed a moment in his office, the introduction was made by the chairman, Rev. Father Burke, of P.E.I., who is well known to Sir Wilfrid, and well acquainted with every member present. Chairs as far as they could be secured having been taken, Father Burke said he was pleased to introduce this important delegation. It had come to make the very moderate demand that express companies be subject to the Railway Commission, so that redress might be had when injustices were inflicted. In his country they had only one company so far, the Canadian Express Company. He hoped for the admission of others in the interest of improved rates. He read the memorial prepared by a sub-committee composed of Messrs. Bunting, Smith and Johnson, and approved by all, and called on gentlemen from the different provinces to express their views.

The memorial was as follows:

To the Rt. Honourable Sir Wilfrid Laurier, Prime Minister of Canada, and Honourable members of the Government:

HONOURABLE GENTLEMEN,—We, the Committee appointed by the Conference of Dominion Fruit Growers, assembled at Ottawa, at the request of the Honourable Minister of Agriculture, for the purpose of considering questions of national importance relating to the fruit industry of Canada, desire, under instruction from the Conference, to lay before you a memorial which has for its object the enactment of legislation by your Government that will, we believe, be of great advantage to the fruit growers of the various provinces, as well as to the public at large.

There is a large area of the very best land of the Dominion devoted to the growth and production of fruit; and, inasmuch as fruit is a perishable article, it is of the very greatest importance that it be placed in the hands of the consumer with the utmost possible despatch, and under the very best conditions. In order to do this successfully, the express companies operating over the railroads of Canada are made use of to a very large extent. It has been found that there are many difficulties in the way of making the best use of this service, one of the chief of which is the high rates charged for transporting fruit in this manner. Relief has been sought from time to time from the companies directly, and with very poor success.

Inasmuch as your Government in its wisdom has instituted a Board of Railway Commissioners for the purpose of adjusting matters of difference relating to the question of transportation, and inasmuch as the express companies operating in Canada have not as yet been placed under the control of the Railway Commission, we desire to make an urgent request that such legislation be enacted at this session of Parliament as will result in bringing the express companies under such control, thus providing a speedy and effective means whereby differences arising between these companies and the general public may be adjusted properly.

And as in duty bound your petitioners will ever pray.

A. E. Burke, chairman; Martin Burrell, Wm. H. Bunting, D. Johnson, Ralph S. Eaton, J. E. Armstrong, M.P.; A. A. McIntyre, M.P.; J. T. Schell, M.P., committee.

Mr. D. Johnson, of Forest, Ont., detailed the disadvantages the fruit interest and other interests labored under, and asked for relief. W. H. Bunting, of St. Catharines, stated that Ontario was united in this demand, and cited cases of very great hardships from overcharge and defective delivery. W. L. Smith, of the *Weekly Sun*, wanted the legislation now, as the case was one of long standing, and the patience of the people was sorely tried. R. S. Eaton spoke for Nova Scotia, where three companies operated, and a through rate was not obtainable, to the detriment of trade generally, and the total undoing of the small fruits trade. Mr. Burrell, of B.C., made a strong plea for the matter of the memorial, showing how the railways and express companies were banded together, and the necessity of a court of appeal in the case of the latter thus made all the more urgent.

In reply Sir Wilfrid said that he was delighted to meet this important delegation. He did not know why the express companies were not subjected to the Railway Commission in the original bill. There must have been some reason. However, the delegation had made out a good case and had his sympathy. He would not like to promise legislation, however, at this session; he wanted it to be short. The memorial would not be forgotten, and in one thing at least he would assure immediate action; he would notify the companies of the complaint and represent to them the cases of over-exaction cited. More than this it was not necessary to say, except that he was in thorough sympathy with the delegation, and hopeful of helping it. Rev. Father Burke then thanked the premier for receiving them so cordially, and giving them so reassuring a reply. All retired satisfied that good work had been done.

Prince Edward Island Letter

Rev. Father A. E. Burke

NOW that we know just where Canadian horticulture is at, after conferring together in the best of feeling at Ottawa, and comparing notes in all the operations for which the name stands, it behooves us to get to work in our respective provinces and keep up with, if we cannot really get ahead of, the procession. We are happy down here by the sea (although nothing boastful shall as much as suggest itself to us) in the reflection that after all, about everything we contended for came our way.

It is really remarkable how uniform the horticultural mind of Canada is after all. Whoever thought of reaching a grade decision without a dissenting voice? Who could imagine a vote in a national council on the barrel package with only two or three nays? The whole thing is rather too Utopian to be classed among the actual. And still this same unanimity will greatly help the work we have in hand.

To tell the truth, we would just as soon have seen the grades made Nos. one, two, and three, No. one being perfect, as now we have "Fancy" but this classification seemed to please better, and we had to stand together. A No. one Canadian apple should be perfect. It will come to that some day. At any rate it is well to have a perfect fruit somehow, so that a purchaser of prime fruit, paying the highest price, at home or abroad, may have what he bargains for or get redress easily.

As I said, we were putting our No. ones up here as perfectly as the fancy grade. The small consignment of Senator Ferguson's apples, mention of which I made the opening day of the convention, is in a line with this statement. I may as well give the document here which W. W. Moore, Chief of the Markets Division, had just put in the owner's hands. It is as follows:

"Yesterday I received a report from Mr. Davis, our inspector at London, on the apples landed by the SS. 'Montezuma' which arrived at London from Halifax on February 16. In the course of his report he makes the following reference to your shipment: 'D. Ferguson, P.E.I., 136 bbls. Ben Davis. This parcel was the best example of honest packing that I have seen. The barrels opened clean, the fruit being free from frost or spot, and the uniformity of putting up the fruit reflects great credit on the packer.' It is not very often that I have the pleasure of reading such a gratifying report on Canadian apples, and I sincerely trust that the returns for this highly creditable shipment will be entirely satisfactory to you."

Before long this will be the rule not the exception, and the Markets Chief will cease to marvel when a P.E.I. shipment reaches London in such prime condition. By the preaching of the profession at Ottawa, and surely it will practise what it preaches, one may well look for a strict and generous conformity to the grading proposed. Uniform packing of uniform fruit in a uniform package should carry Canada as an apple producer proudly before the world.

We were personally acquainted with many of the delegates to Ottawa, and knew the rest by reputation. It was a great pleasure to work with such a school of patriots, whose singleness of purpose, high ideals, and splendid charity could be but a reflex of the refining influence of the great science they so loyally espouse. Many national gatherings we have attended; this was the most lovable—the most practical.

CROP PROSPECTS

In this province the fruit trees have suffered no injury that I know of in the past winter. The damage of a previous snow blockade may be more perceptible than after the banks disappeared in 1905, but for the most part there is little injury from this source, where any attempt at repair was made.

The surprisingly balmy atmosphere of Feb. has not resulted in any injury to the blossom buds, as was anticipated. Even the cherry buds look undamaged. Mice have not got in any of their work either. Greater care is now taken, and anyway, there appears little trace of them in the still slightly snow-covered corners of our orchards.

There appears to be a good show of blossom buds; and as last year was an off crop with us, we may, in the ordinary course of events, expect a full crop this season. Back-killing, as all can understand, is noticeable nowhere after so mild a winter. P.E.I. trees have come through splendidly and should give a good account of themselves.

Fruit Trade in Montreal

E. H. Wartman, D.F.I.

The apple is the favorite fruit, but the man of small means in this city can take only a passing glance at some of our varieties. Spy is the leader at 70 cts. a peck, or 40 cts. a doz. However, there is a cheaper class with the taste of apples that can be bought at a more moderate rate. These satisfy those persons who will not resort to other fruits.

Some in the trade say: "How short-sighted we have been! When we could have bought No. 1 apples at $2.50, we said no." They have

been sorry ever since, as they are paying $5.50 for the same quality now, and the price is likely to advance to $7.50 before June. However, we may learn a lesson to benefit us in our future buying and caring for our fruit.

It has been a remarkable season—unusually mild all winter. Still apples never kept better. It was not an unusual thing to turn out barrels of certain varieties on March 1, and not find one decayed specimen. This firmness that has caused such good results must have been due to the season—shower and sunshine when the apple needed it.

Our market is well supplied with oranges, bananas, grape fruit. Strawberries are arriving in limited quantities at 40 cts. a qt.

Our Letter From Nova Scotia

G. H. Vroom, Middleton, N.S.

In 1904-5 the winter was very severe, and deep snows covered the ground from Nov. until the end of March. This was a great benefit to the grass land, and insured an abundant crop of hay. It was not so good, however, for the fruit trees. Mice worked under the deep snow and destroyed the tender bark of the young trees, and hundreds were lost in this way. The heavy snows piled on the branches of the large bearing trees, and many splendid orchards were injured very much.

The winter of 1905-6 has been very different. The falls of snow have been very light. In fact, only on a few occasions has their been enough for sleighing. Alternate freeze and thaw has been the condition of the weather. I have been watching the effect of this on the fruit trees, and have gone carefully over a large number. Up to date I can see no bad effects. There are no signs of winter killing, and there is an abundance of blossom buds which look healthy and strong, and indicate a full bloom this spring. It is within the bounds of reason to expect N.S. to export over 500,000 bbls. of apples this coming season.

Mice have done little or no damage to young trees. In fact, it has not been a favorable winter for them to work on account of there being no snow to shelter them.

There seems to be a strong feeling among fruit growers to produce a higher class of fruit in future, and pack it better than in the past. This is laudable, for there is great need of improvement in N.S. There is, also, a growing interest in spraying, and it will be carried on extensively in the Annapolis Valley this spring. I understand the spray pump vendor has been doing a good business. Pruning is being attended to, but the weather is too cold and the soil too wet for cultivation. There are, perhaps, 3,000 bbls. of apples in N.S. for export yet. These are Nonpareil.

Preventing Potato Rot

Ed. The Canadian Horticulturist:

In the December number of your paper I notice an article entitled "Results of the Potato Rot." The article I mention tells of the prevalence of the rot in Ontario, and the great loss resulting therefrom. All of this is true, but in the article there is a statement with which I take issue. It is the plea that the farmers of this Province must learn to use more commercial fertilizers rather than barnyard manure to prevent rot. I have read also in articles from other writers that barnyard manure was the cause of "scab."

I have only an acre of land, and the most of that is in fruit, but I always try to grow my own potatoes (being part Irish). There are two plots of land on which I have grown them alternately except the last two years. The dividing line between these two plots is a row of grape vines. Part of the ground has had three crops of potatoes. It takes a bushel of potatoes to plant these plots, that is, I plant one bushel each year. Every year I manure the ground with barnyard manure—all we can possibly plow in, for as I keep a horse and a cow I have all I know what to do with. The last two years the potatoes have been on the south side of the row of vines, and on the south side of this potato patch is a row of large apple trees shading part of the land, and up the centre is a row of plum and cherry trees and a grape vine. This row used to be all plums but some of the trees were frozen out during the winter of 1903-04. Notwithstanding all these things being against securing a good crop, I had 12 bushels of fine saleable potatoes and a barrel of small ones and those with green ends. Only two rotten potatoes were found in the patch.

I attribute the absence of rot to the sprayings that I gave them. They were sprayed with Bordeaux on the following dates: June 20, July 5, July 10, July 21, Aug. 7, and Aug. 23. They were of the American Wonder, Delaware, and one of the Carmens, the No. of which I do not know, varieties. The Carmens were best in yield but a little rough; all were of good quality but Delawares were best.

The point that I wish to make is that since the ground was manured heavily every year for the last six years, why did not these potatoes rot or scab, if barnyard manure causes these troubles? I still have them in my cellar except those we have used and there is no sign of rot. I firmly believe that it was the spraying that saved them, for other patches on each side where nothing was used except a little Paris green for the bugs, were very badly affected with rot.

J. Fred. Smith,
San Jose Scale Inspector,
Glanford, Ont.

Toronto Growers Meet

That the interest of the Toronto vegetable growers in their organization is not waning was shown by the large attendance and the interesting discussions that took place at their meeting at the Albion Hotel on April 7. Glass in its relation to outdoor work was discussed by H. E. Reid; Jas. Dandridge dealt with the best method of growing early potatoes; and the most satisfactory handling of tomatoes for an early crop was taken up by Jas. Gibbard, Sr.

It was claimed by Mr. Reid that the chief drawback in attending to greenhouses in connection with outside gardening is the difficulty of securing labor. For the greatest profit, he said, attention should be given to glass. When the two are run together the outside rush commences when the crop from the houses is ready for market, and in many cases it is not put on the market in the best condition. It is only by strict attention to the minor points that a profit can be reaped from greenhouse crops.

For producing early potatoes Mr. Dandridge explained that his seed is started in the hot bed or in the greenhouse about April 10. The potato sets are placed close together and covered with light loamy soil. The buds on the bud end, or on the end opposite where the roots are attached, commence growth more readily and are the best for an early crop. If started in a hot bed or greenhouse they have buds 1 or 1½ in. long, and a mat of fibrous roots by May 1, at which time they can be put in the field. He recommended planting them 12 in. apart in rows 30 in. apart, and covering them with 3 in. of soil. The early Ohio was mentioned as being the best variety for early crop.

Suitable soil was mentioned by Mr. Gibbard as a chief requisite in producing early tomatoes. Plants set on dry loam produce fruit at least two weeks earlier than those on heavier soil and wetter location. Earliana and Earliest of All were mentioned as two of the best varieties. Mr. Gibbard said that the seed should be sown in flats about Mar. 15, and the young plants pricked off to other flats as soon as they are large enough to handle. Before the plants become spindly they should be pricked off again to individual berry boxes and put in the cold frame. About June 1 the plants should be set in the field in rows 4 ft. apart and 12 to 15 in. apart in the row. Each plant is supported by a lath, and all side shoots picked off. When the plant reaches the top of the lath the tip is nipped off. Shoots should be removed and the tying attended to at least once a week. It was claimed that this method would result in ripe fruit 10 to 14 days earlier than could be had from the old system with the plants lying flat on the ground.

Owing to a rush of work on the market garden during May and June, the members decided not to have meetings during those two months. The next meeting will be held July 7. The executive will arrange for speakers and subjects for that date, and also will arrange details for their annual excursion early in Aug.

Hamilton Growers Meet

The membership of the Hamilton branch of the Vegetable Growers' Association has increased beyond 50. At a recent meeting W. A. Emory was appointed to act with R. H. Lewis on the provincial board. Sec. Stevens wrote The Horticulturist that the membership would soon entitle them to three directors.

Quotations from basket manufacturers in New York showed that the firm could not supply 11 qt. bskts. Owing to the lateness of the season they claim it will be impossible to have the larger baskets laid down as cheaply as the 6 qt. bskt. The association decided not to place an order with the firm. A committee was appointed to consider the advisability of forming a joint stock company for the purpose of manufacturing baskets for the members.

Two canning factory promoters were present and asked the growers to take stock in a new company to be known as The Producers' Canning Co. No stock had been subscribed, and the members decided to go no further than to promise a supply of first-class produce if the factory was put in operation.

At a meeting on Apr. 17, Sec. J. A. Stevens was appointed purchasing agent. This has resulted in a saving of 9% to members on their baskets, and should help to swell the membership. Since this step was taken several growers have joined.

Fruit Conditions in Lambton

D. Johnson, Forest, Ont.

In Lambton County there are hundreds of acres in fruit made up principally of small orchards containing from one to 10 acres each. The greater part of the fruit is grown in the north along the south shore of Lake Huron and in the vicinity of Forest, Thedford and Arkona. In that section some have gone extensively into apples, plums, pears and berries, and these, when properly cared for, have proved to be very profitable. Peaches have been found profitable in the neighborhood of the lake. Such varieties as the Alberta, Smock, Rareripe and St. John suit best. Lambton orchards have so far escaped the ravages of the San Jose scale, but are badly affected with fungus diseases such as blight and spot. These pests greatly reduce the value of the fruit every year, unless carefully sprayed. If Bordeaux mixture is intelligently applied excellent results follow. However, many of the farmers are discouraged with their orchards, and look upon spraying as an added expenditure, although the returns do not warrant it. When they have a crop there is no demand, they say, and when there is a demand they have no fruit.

The greatest stimulant that could be given the fruit growers here, or elsewhere, would be a good market. If the Government would spend some of the money in helping the fruit growers to get in touch with the consumers instead of lavishing it upon railroads, they would greatly help an industry that would be a credit to the country as well as a source of great revenue to the railways, which would, at the rates now charged, reap almost as great a reward from the labor and skill of the fruit grower as the producers themselves.

Fruit Meetings in the Niagara District

THE Niagara Peninsula Fruit Growers' Association held its annual series of public meetings during the last week in March. Meetings were held in Beamsville, Jordan Station, St. Davids and St. Catharines. The association was fortunate in securing as chief speakers the services of Mr. J. S. Woodward, of Lockport, N.Y., and Mr. Willis T. Mann, of Barker, N.Y., both of whom are well-known authorities and pleasing speakers.

SPRAYING

One of the most interesting addresses of the series was Mr. Mann's talk on spraying. "It is a profitable operation," said the speaker. "We cannot raise fruit without it. Spraying is absolutely essential to success. To spray intelligently, fruit growers should know something about the life history of the insect or the disease that he intends to combat."

The standard fungicide is Bordeaux mixture. Mr. Mann's formula is 3½ lbs. copper sulphate, 6 lbs. lime, 40 gals. water. An excess of lime is used to prevent injury to foliage. The old formula in old conditions was effective without burning; now, new conditions and new methods of application have changed the effect on the foliage. The reason for this is not definitely known. It is supposed that the extreme fineness of the spray produced by power sprayers has a more intense effect on the foliage. The Geneva expt. station is conducting experiments along this line The Bordeaux mixture is used for all fungous diseases, although for peach leaf curl the lime-sulphur wash is just as effective.

The lime sulphur wash is the best yet for the San Jose Scale. "I believe the San Jose Scale is a blessing in disguise," said Mr. Mann. "It can be controlled by the industrious man, while the careless grower will be crowded out of the business. This will elevate the standard of the fruit industry, and of the people connected with it."

APPLE CULTURE

In an address on "Apple Culture" Mr. Mann quoted statistics to show the relative positions of the various states in the production of apples. New York state produces more fruit per tree than any other apple-producing state. This is due to the fact that improved methods in culture and care are more generally adopted in that state than in others.

The practice of spraying increases both the price of the fruit in an orchard and the value of the orchard itself. The market demands good fruit and buyers quickly pick up a good article at a remunerative figure, and they enter the districts where good apples are grown and compete with each other in buying. To-day in planting orchards there have been radical changes made in care and methods of culture. Mr. Mann's system is to get two-year-old nursery stock of medium height (not large), well rooted, head about 2½ ft. from the ground, allow the various branches to remain, prune very little, just enough to shape the trees, give thorough cultivation, spray systematically. The orchard he plants on the filler system, the desired distance of trees apart for certain varieties is 40 x 44 ft., so by filling in between with other varieties makes the trees 20 x 22, the intervening trees are cut out when the trees commence to meet and crowd by this system. He has an orchard, seven years planted, which has produced crops for three consecutive years, and which last season produced 600 bush. on eight acres. Excessive pruning when the trees are small tends to produce wood growth. Then, when trees are large, low heading is practised by keeping the trees pruned back at the top as the tall apple orchards cannot be effectively sprayed and leave a margin of profit.

Mr. Mann advocates planting standard varieties known to be adapted to the particular locality where the orchard is to be planted. Besides these he mentions Spitzenburg, a choice variety that has been discarded in some districts because not properly cared for. It is one of the finest apples when looked after as it should be in the matter of spraying, pruning, etc. Boiken, a newer apple, is also a valuable variety. It is an early and regular bearer, and when stored is free from scald, a serious warehouse trouble with most varieties of apples.

During the series of meetings Mr Mann also delivered a valuable address on the "General Principles of Fruit Growing." This address will be published in a future issue of THE HORTICULTURIST

ORCHARD COVER CROPS

In an address on the "Necessity and Value of Cover Crops," Mr. J. S. Woodward referred to the enormous quantity of plant food taken from the soil by crops of the different classes of fruits. Such a tax on the land should be returned by the use of some sort of fertilizing material. The most economical means of doing this is the use of cover crops. Hairy vetch is one of the best crops of this kind but the seed is expensive. It is a rapid and heavy grower and assimilates more nitrogen per acre than any other legume. According to experimental data, it has been shown to be worth $43 per acre. About 30 lbs. to the acre makes a good thick cover. Mammoth clover is worth $23 per acre, and is second in value to hairy vetch. Besides increasing the amount of nitrogen in the soil, these crops are valuable to protect the roots in winter, to improve the texture of the soil, and to hasten maturity of the woods of trees in the fall. Neither hairy vetch nor mammoth red clover will do well on a "sour" soil. To determine whether a soil is sour or not, use Litmus paper. Soils that are acid or sour may be improved by the use of lime. Oats and rye may be used as cover crops on soils that are already over rich in nitrogen.

Potash and phosphoric acid, also, should be added to the soil as they are required in the building up of plant tissues and in producing high color, flavor and body in the fruit.

Mr. Woodward spoke in an interesting manner on "The Leaf; its Office, its Importance, and How to Keep it Healthy." A leaf is very highly organized. A study of this organ is of practical value to the fruit grower. By means of illustrative charts Mr. Woodward showed the mechanism of the leaf. He showed how the leaf does work for the whole tree or plant—how it breathes and how it absorbs and digests plant food. Out of crude materials it makes food and it cannot do this unless in contact with sunlight.

The leaf must be kept healthy. When it is diseased both the stomach and the lungs of the tree are effected and the tree cannot produce fruit. When the leaf is covered with fungi it should be treated with spray mixtures, When the leaf appears yellow in color, the tree needs nitrogen. Other conditions indicate a want of potash and phosphoric acid. The leaf and the tree must be given these constituents, through the roots, by the use of cover crops, commercial fertilizers and barnyard manure.

THE IDEAL PEACH ORCHARD

This topic furnished the subject matter of another address by Mr. Woodward. He said that successful peach culture depends first of all upon the location. The St. Catharines district is particularly favored in this respect. An ideal soil must be chosen also, and that is one of sandy nature, well drained but retentive of moisture. The trees should be set out when one year old and cut back to a foot or a foot and a half from the ground. Low-headed trees are best for purposes of spraying and harvesting. The work of fighting the San Jose scale is lessened when the trees are headed low.

The trees should be planted 20 ft. apart. This facilitates the work of cultivation, pruning, spraying, etc., and it allows the sun to get in. A peach orchard must be looked after. A man who neglects his orchard for one year had better tear it out and begin again. It will never make up for the loss occasioned by a year's careless ness. The orchard may be inter-cropped with beans or potatoes for two years but not longer.

Mr. Woodward pointed out that it is unwise to allow a peach tree to overbear. There is as much of a strain on a tree in bearing small peaches as large ones, as it is forming the pit that saps the strength of the tree. Peaches should be thinned in June, when the newly formed fruit is about the size of the end of a person's thumb.—A.B.C.

Bulletins for Fruit and Vegetable Growers

DURING the past few weeks numerous bulletins and reports have reached THE HORTICULTURIST from the different colleges and experiment stations in America. They contain valuable information for the fruit grower or the market gardener. Lack of space prevents us giving a full review of each, but a brief outline will show our readers their value. Those who wish to secure them for reference can, in most cases, have them by writing to the college or station from which they are issued.

VERMONT BULLETINS

Bulletin 119 of the Vt. Expt. Station discusses the occurrence of plant diseases throughout that state during 1905. Apple scab and pear blight, brown rot of plum, bacterial diseases of vegetables, including the early and late blights and the potato rot are dealt with fully. Preventives and remedies are discussed in each case. In this bulletin lettuce culture is outlined, and the results from crops grown in flats compared with those grown on benches. Experiments have shown that a greater net profit can be secured from closely planted lettuce than from that given sufficient space to develop into full sized plants.

Bulletin 120 gives the results of experiments in planting white pines. It has been shown that this tree is very profitable for forest planting under most conditions. Bulletin 121 deals with the laws governing the sales of commercial fertilizers in that state. Tables showing the amount of available nitrogen, phosphoric acid, and potash in the various brands put up by the different manufacturers, are given.

The susceptibility to rot of potatoes is dealt with in bulletin 122. Experiments have been conducted to show the resistance of vines to blight and tubers to rot and to scab. Careful notes were taken during the experiments regarding the conditions of the soil and the cultural methods adopted.

THE PENNSYLVANIA STATION

Bulletin 76, from the State College, Centre County, Pa., contains an outline of experiments conducted in testing varieties of potatoes. Before planting the tubers were treated for scab with a solution of two oz. corrosive sublimate to 16 gal. of water for 1½ hours. The best early maturing varieties included Eureka, Early Norwood, Pride of Michigan, Freeman, and Six Weeks. Some of the best late matur-

ng varieties were Delaware, Admiral Dewey, Maggie Murphy, and White Mammoth.

SCALE TREATMENTS IN OHIO

The results of treating San Jose Scale with sulphur sprays and other compounds are given in Bulletin 169 of the Agri. Expt. Station, Wooster, Ohio. It has been shown that careful straining and application as quickly as possible after the mixture is prepared, is essential to effective treatment. The size of the trees and the condition of the bark proved to have much to do with the success in controlling the Scale. The mixture that gave the best results was composed of 15 to 20 lbs. of lime and 15 lbs. of sulphur in enough water to form a thick liquid, and afterwards diluted to make 50 gals. Spring application is the most advisable, but if it is impossible to do the work at that time, a fall spraying is recommended. In cases of extreme infestation both spring and fall sprayings are advised.

PRUNING EXPERIMENTS

Bulletin 8 of the State Horticultural Society, Madison, Wis., in discussing the best methods of pruning orchard trees, says that to prune intelligently it is necessary to be acquainted with the principles of plant growth. These principles are fully outlined. The difference between fruit buds and leaf buds and the healing of wounds in fruit trees are explained. Pruning young trees and renovating neglected trees, as well as the most desirable season for pruning, and the most efficient pruning tools, are treated.

BULLETINS FROM NEW HAMPSHIRE

The Gypsy Moth, which has been a source of trouble in New Hampshire, is dealt with in Bulletin 121 of the Agri. Expt. Station at Durham, N.H. Striking illustrations are used in connection with the life history of this insect, and general remedies suggested. Bulletin 123 comprises a report of fertilizer inspection conducted at that station during 1905. Out of 105 brands sampled and analyzed, 27 failed to equal the guarantee in one or more ingredients, while in all but nine a lack of one element was made good by an excess of another. Tables showing the amounts of nitrogen, phosphoric acid and potash are included.

MICHIGAN BULLETIN ON INSECTS

Bulletin 233 recently issued by the Mich. Expt. Station at Lansing, is one of the most exhaustive works on insects of the garden in print. The garden crops are arranged alphabetically with the various insects attacking each crop placed in order under each division. The different stages of the numerous insects are clearly illustrated by drawings and cuts. Life histories, preventives, and remedies, are given for each pest. Every gardener should have this bulletin for reference.

DELAWARE BULLETINS

Experiments conducted at the Delaware Expt. Station, Newark, Del., regarding the relative efficiency of dust and liquid spraying, are outlined in Bulletin 72. The advantages and disadvantages of dust sprays are discussed. The formula used for the latter was superfine limoid, 100 lbs.; pulverized copper sulphate, 2 lbs.; Paris green or green arsenoid, 2 lbs.; and sulphur, 2 lbs.; while in the liquid sprays Bordeaux mixture and Paris green were used. The results showed that the liquid spraying gave slightly better results, Paris green in liquid leaving 3 4-10% of wormy fruit in the total yield, and in dust 4 4-10%. The green arsenoid in liquid resulted in 4 3-10% wormy fruit, and in dust 7 3-10%. It is recommended that on level ground the liquid spraying outfit be used, but on hilly ground or where rapid and thorough work is desired the dust spraying may be practised with good results. In large orchards a combination of the two is suggested.

Some experiences with insecticides for San Jose scale are outlined in Bulletin 74. Lime, sulphur and salt washes and soluble oils, such as Scalecide and Killoscale, and kerosene emulsion were experimented with. The lime sulphur and salt gave satisfactory results when applied late in the fall and early in the spring. The soluble oils produced varying success. The kerosene emulsion with soap as an emulsifying agent was effective.

ILLINOIS BULLETINS

The possible profits from the farmer's vegetable garden are discussed in Bulletin 105 of the Agri. Expt. Station, Urbana, Ill. In 1900 half an acre was selected on which to grow an assortment of vegetables suitable for the farmer's garden. The vegetables were arranged in the order of their planting so that the unplanted portion could be harrowed to keep it free from weeds and to supply moisture after early crops were harvested the later crops were put in their steads. The same general plan was followed for five years with varying results. The net profits for each year from 1900 to 1904 were: $51.78, $33.41, $93.35, $84.63 and $111.08, or an average net profit for the 5 years of $74.85. This excellent bulletin contains a plan of the garden with the space devoted to each crop, the cultural methods followed, and a full account of expenses and returns for each year's operations.

Bulletin 106 discusses the relative merits of dust and liquid sprays for the apple orchard. Experiments under different conditions and with the various orchard pests showed that liquid sprayed trees produced fruit of better quality. The dust spray proved to be 52% cheaper, and was much more readily transported about the orchard, but it had no other advantages.

A CORNELL BULLETIN

The blight canker of apple trees is well illustrated and fully described in Bulletin 236 of the Cornell University, Ithaca, N.Y. After experimenting to find out the best treatment for this disease it was decided that cutting out the cankers with a sharp knife and swabbing the wound with a weak solution of corrosive sublimate (one tablet to one pint of water), or with a 3% solution of copper sulphate (one oz. to two gals. of water), and a thorough painting with heavy lead paint after it dries, was the most effective remedy. It is advised that this work be done early in the season to prevent the spread of the canker, and to allow the wound a long period in which to heal. Preventive measures are discussed. Wolfe River, Talman Sweet, Pewaukee, Red Astrachan, Tetofsky, Grimes Golden, Wine Sap, and Famense, are mentioned as the varieties that are most resistent to this disease. The more susceptible varieties are Baldwin, Ben Davis, Mann, Hubbardston, Fall Pippin, Stark and Greening.

BULLETINS FROM GENEVA

In Bulletin 227 of the New York Agri. Expt. Station, Geneva, N.Y., experiments have been conducted with a destructive apple rot that follows the apple scab. The results of these experiments showed that the disease could be held in check by a thorough spraying to prevent the scab, and by discarding all fruits that show any signs of the disease when the fruit is being picked and sorted. It is advised that the fruit be stored in a dry place with a temperature below 45 deg., as soon as possible after picking. Cold storage retards the development of the fungus, but the spores begin growth when brought into a warmer atmosphere.

A report of analyses of samples of fertilizers collected from different firms is published in Bulletin 272. The quantity of nitrogen, available phosphoric acid, total phosphoric acid and water soluble potash in 100 lbs. of the fertilizer are given for each brand.

Experiments were conducted in treating San Jose scale with sulphur washes, kerosene mixtures and Scalecide. The lime washes proved satisfactory, but the results did not show whether or not there was danger of injuring the tree by applying the spray in the fall. Kerosene emulsion proved unsatisfactory, and experiments will be conducted to determine if a safe and efficient combination of the lime and oil can be made. Trees treated during the dormant season with Scalecide were free from living scale during June, July and early Aug., but with weaker preparations living scales were noticed during the latter part of that month. Applications containing 3% of Scalecide had little or no effect on the pest.

Government Help Wanted

D. Johnson, Forest, Ont.

During the last few years a great deal has been said about the co-operative movement among fruit growers. The hope is frequently expressed that the movement may become general, as it seems the only practical method of getting farmers to take an interest in their orchards.

Co-operation, however, necessitates greater care and responsibility than the ordinary farmer cares to assume unless he can see he will gain distinct personal advantage by so doing.

Fruit growers contemplating such a step meet with the opposition of the local dealers who, seeing their business in danger, discourage the growers in every way possible from co-operative action and usually succeed in getting the growers to sell their fruit to him, when he walks off with a large part of the profit that belongs to the producers.

Such being the evil influences exercised against the co-operative movement, I believe the associations have a right to ask that fruit growers undertaking co-operative work in the right spirit should be given assistance. A man thoroughly acquainted with the circumstances should be sent by the government to the British markets, where he would in public and in private explain to the trade there the advantages of buying direct from the central packing houses in Canada. The pack of the association could be assured by strict government inspection, so that any brand recognized by the provincial association would be a sufficient guarantee of honestly packed fruit.

If a man such as Mr. Sherrington of Walkerton, if he would undertake the work, was for a time stationed in England, much good would result, as he has already done more for the co-operative movement than any other man in the province.

An effort in this way on the part of the government, would be of great value to the movement and would encourage those who have taken a leading part in pressing forward the work.

If a good market is assured the fruit growers who co-operate, they will be quick to avail themselves of the opportunity for organization. Orchards that are neglected now would flourish through the application of the intelligent care they would soon receive once a market was opened for their product.

Mark Packages with a Stencil

A. McNeill, Chief Fruit Division, Ottawa

Question—Will a lead-pencil or a tag meet the requirements of the Fruit Marks Act in marking barrels and boxes?—Apple Shipper.

Answer—The Fruit Marks Act requires that the name and address of the packer, the variety of the fruit and the grade of it shall be marked in "a plain and indelible manner" on all closed packages. A lead-pencil is usually not "indelible," and is very seldom "plain." While it would be wrong to infer that a pencil could not under certain circumstances be used it is much better, quite apart from the Fruit Marks Act, to mark every box and barrel of fruit with a stencil, or, in some cases, with a rubber stamp. A tag is so easily detached that it could not be accepted as marking the package in an "indelible" manner. The marks must be placed on the package itself with a stencil, or in some way so as to make them permanent.

The Province of the Proposed Experimental Fruit Farm*

IN the course of my interviews with fruit growers during the past few months I have had occasion to secure many expressions of opinion on the matter of an experimental fruit farm or horticultural college for the Niagara district. Ninety per cent. of the growers are anxious to see an experimental farm established somewhere in the Niagara peninsula and established soon. Opinions differ as to the proper location; some think that the industry is of sufficient importance to warrant the establishing of a fully-equipped, combined horticultural college and farm; an infinitesimal few express the other extreme and contend that neither a college nor a farm is necessary as they know it all now. A few brief notes on a few of the many expressions of opinions that I have recorded may indicate the feeling of growers in general.

"We require a fruit experiment station owned and managed by the government," said Major F. M. Carpenter, Fruitland, "and it should be large enough to test varieties on an extensive commercial scale. Varieties should be grown in quantity so that the consuming public may pronounce upon merits of variety from their viewpoint. Among other things, an effort should be made to produce better shipping varieties of black grapes. Standard varieties, like Concord and Worden, are thin skinned and crack in the basket, and black Rogers are unproductive. There is room for improvement in grapes for long distance shipping."

Mr. J. W. Smith, Winona: "We need an experimental fruit farm in the Niagara district, and it should be located in a section extending from the flat of the mountain to the lake, where different types of soil can be secured. The Dominion Government should bear part of the expense. Experts should be employed to devote their whole time and attention to the work. We feel that the horticultural department at the O.A.C., Guelph, is of little benefit to growers in this district. For this reason a fully equipped horticultural college might be established at a later date in connection with the farm here."

Mr. J. G. Nash, Stoney Creek: "An experimental farm would be of immense value, particularly in the origination of new varieties. Thorough investigation should be conducted along the lines of winter protection for tender fruit trees. I believe that peach buds are often killed long before most people think. They are more often killed in late fall rather than during warm spells in early spring, as is the general opinion. Many varieties of peach buds do not fully mature in the fall, and the first hard frost gets them. Experimental research would teach us how to meet this difficulty."

Mr. F. B. Harvey, Stoney Creek, offered the suggestion that the work of a farm of this nature should not include apples. Experimental work with apples can be carried on at the fruit stations in other parts of the province. By such an arrangement more area, time and expense can be given to the tender fruits that are adapted only to this district.

Mr. A. B. Foran, Winona: "The Department of Agriculture cannot do anything that will meet with such approval amongst fruit growers as the establishing of an experimental fruit farm in the Niagara district. It would benefit not only the grower, but the consumer as well. Growers are annually sinking thousands of dollars experimenting with varieties, most of which are worthless. This work should be done by the Government, and done in a fruit section and by capable men. The experimental work in fruits at Guelph is one of no value to Niagara growers."

Mr. W. W. Beamer, Beamsville, and others, favor the establishing of a horticultural college in connection with the farm. Horticultural education, both in practice and science, is necessary to insure progress in fruit growing. We should consider the probable requirements of posterity.

Mr. J. W. Brennan, Secretary Grimsby Horticultural Society: "An experimental farm should test the value and action of all kinds of commercial fertilizers on the various types of fruits and fruit soils. Many growers annually spend a lot of money on fertilizers, and oftentimes we do not know whether it pays or not."

Mr. E. L. Jemmett, Beamsville: "An experimental farm in the Niagara district should be located near good transportation facilities for two reasons; first, so that growers and others may visit the farm and observe the operations thereon with the least possible trouble and cost, and second, so that it will be convenient for investigation of transportation problems."

Mr. Jas. H. Walker, Beamsville: "Among the many problems for an experimental fruit farm is the one of packing and packages. We need more definite knowledge along these lines. An experimental farm would be of great value to new settlers in this district, particularly to those who come here unacquainted with our conditions and the practice of fruit growing. It would attract the most desirable class of land buyers, and thereby assist in building up our country. The Guelph institution, from a fruit-growing standpoint, is of little or no value to growers in this district."

Messrs. W. B. Rittenhouse, E. Hipple, J. H. Rittenhouse, and others in Vineland, claimed that growers have to experiment personally with new varieties and new methods that should first be thoroughly tested at the expense of the Government. An experimental farm could test the novelties offered by nurserymen, and thereby save money to the individual grower.

Mr. C. M. Honsberger, Jordan Station, ex-President Niagara Peninsula Fruit Growers' Association, said: "The fruit industry of the Niagara district is of sufficient importance to warrant the establishing of an experimental fruit farm on a large scale. We need new varieties of fruits for shipping, particularly in peaches and grapes. We need new grapes of the Rogers type, but self-fertile and better bunches. We must have a farm of this nature established as soon as possible. At Guelph it seems that nothing is being done for the benefit of fruit growers except indirectly; the horticultural interests are neglected. We fruit growers would like to know what they are doing at Guelph in horticultural work. This year, as in the past, circulars from that department were sent out offering fruits for cooperative experimenting, but some of the varieties offered have been worked with and experimented with for 50 years. It is only a waste of time to experiment with Concord grapes and Greening apples; these are standard and reliable varieties, and already known by everybody. We want to hear of something that we do not know; we want something new; we want a horticultural department established along up-to-date lines and established in the Niagara peninsula."

*These interviews were secured by A. B. Cutting, B.S.A., while visiting the fruit growers in the Niagara district in the interest of THE HORTICULTURIST during January and February. Lack of space has prevented their publication at an earlier date.

Planting and Pruning Currants

A. W. Peart, Burlington, Ont.

CURRANTS thrive on a wide range of soils, but have, however, a preference for a rich, damp, but not wet one. For commercial purposes as well as domestic, the following varieties of red currants seem to fairly well cover the season: Victoria, Wilder, Cherry, Foy's Prolific, North Star, and Prince Albert. The first four mentioned ripen from early to medium; the North Star medium to late, and the last one from late to very late.

Unless the soil is thoroughly drained I prefer spring to fall planting. Often on damp or low soils the young plants, when set in the fall, are heaved out by the alternate process of thawing and freezing in April. It is more satisfactory to plant in the spring as soon as the land is dry enough to work—when there is life in the soil, and its texture is granular. They should never be puddled in as it stunts them.

The plants should be set five or six feet apart each way. A great deal of hard work is saved by ploughing one way a deep furrow in which to place them. They should, however, line each way for cultivation purposes. Plant fairly deep, pruning the young bush so that it will grow into the bush, not the tree form. In other words, a young currant bush should have four or five stems springing from the roots, not one. Should there be only one, and the borer gets in, the entire plant is destroyed

Growth is accelerated by cutting away the bruised, torn portions of the root. The richest soil should be placed directly on the young roots, and the poorer at the surface. In filling in the soil tramp it reasonably well, leaving a depression of two or three inches around the plant. Cultivation will gradually fill this in and kill young weeds at the same time. The top of the young plant should be cut back to a few buds to balance the root.

Pruning may be done any time after the crop is harvested and before vegetation starts the succeeding spring. Adult bushes should be severely thinned; those stems approaching the ground should be removed, and those making an abnormal growth cut back to give the bush symmetry.

The bushes should be ploughed in the fall for drainage purposes, and the cultivator started in the spring as soon as the soil is dry. This levels the ground, kills weeds and retains moisture. Cultivate both ways and repeat the process every two or three weeks until the crop is ready to be harvested.

Currants are heavy feeders and will quickly respond to careful cultivation and liberal manuring. Well-rotted stable manure supplies not only the sort of food wanted, but also humus as well, which is so desirable in most fruit plantations.

BLACK AND WHITE VARIETIES

Black currants differ but little from red in the mode of handling. As a rule the bushes grow larger and should be planted at least a foot farther apart. The leading black varieties for commercial purposes are: Saunders, Lee's Prolific, Naples, Black Victoria, Collins Prolific and Champion. In white currants the Grape and Imperial take first place.

GOOD TOOLS to cultivate the soil are as necessary for a good crop as good seeds. Many growers are using the same implements their fathers used. To these men we would suggest the use of Iron Age Tools as a means of increasing the value of their crops. Messrs. J. A. Simmers, of Toronto, Ont., will mail you a Catalog containing full information regarding these modern implements if you send them a post card.

NOW IS YOUR CHANCE—THE CANADIAN HORTICULTURIST will be sent to any address in Canada or the United States for four months for twenty-five cents. Send your name in at once and tell your friends of this offer.

I wish to be retained on your mailing list as one who greatly prizes THE HORTICULTURIST. I enclose the name of a new subscriber and will try and send another in a day or so.—S. P. Rowell, Montreal, Que.

Fruit Conditions in Ontario are Favorable

SPECIAL reports received by THE CANADIAN HORTICULTURIST from correspondents in different parts of Ont. indicate that fruit trees and bushes have come through the winter in excellent condition. Similar reports have been received from the Maritime Provinces. The reports from Ont. are as follows:

EASTERN ONTARIO

Harold Jones, Maitland—"The winter has been favorable to all tree and bush fruits. Apples are coming out in a bright, healthy condition, with fruit buds well developed, giving promise of a full bloom. Plums and cherries promise well, but may suffer by sudden change to a low temperature. Strawberries are looking well, but the acreage is below normal."

W. T. Macoun, C.E.F., Ottawa—"Apple trees apparently have come through the winter well, and promise a medium to good crop, judging by fruit buds. Pears, plums and cherries are not grown to any extent. Currants, raspberries and gooseberries came through the winter well, but strawberries were badly injured, and will be a light crop. Grape vines are still covered.

"There is no special boom in planting, and no large plantations are being made. The McIntosh and Wealthy apples are the popular varieties."

Elmer Lick, Oshawa—"Indications point to a good crop of fruit of all kinds in Ontario county. No winter-killing. Plenty of fruit buds on apple trees. There has been a very large increase in oyster shell back louse in many orchards. There do not seem to be very many new plantations of any varieties of fruit."

NIAGARA DISTRICT

A. W. Peart, Burlington—"Indications are that fruit plantations generally have come through the winter in good condition. With the possible exception of a few of the more tender varieties of peaches and Japan plums, fruit buds appear to be sound and normal. On low, undrained ground strawberries have been damaged by heaving. The prospects are for at least an average crop of fruits.

"Some planting will be done chiefly along the lines of strawberries, pears and cherries. Increased attention is being given to spraying and the better care of orchards."

Linus Woolverton, Grimsby—"The fruit buds give a fair promise of an average crop. Peaches were a heavy crop last year, but nevertheless give a fair promise for this season. Apples will be a full crop. Pears and plums will be above the average. Raspberries show well, but the acreage has been lessened on account of low prices. People here are annually planting a large additional acreage of grapes, peaches, pears and small fruits. Plums are not being planted because of low prices. Very few Japan plums are planted, because of their inferior quality."

ESSEX COUNTY

The outlook is for a full crop of cherries, plums, pears, apples, and every peach tree of bearing age is full of fruit buds, and if weather conditions are favorable, there will be an abundant supply. The fruit growers are very busy spraying for fungous diseases, San Jose Scale, etc., using the lime sulphur wash.—E. E. Adams, Leamington.

Vegetable Conditions Throughout Ontario

REPORTS received from the correspondents of the Ontario Vegetable Growers' Association, located in different parts of Ontario, show that there has been a marked increase lately in the amount of vegetables grown under glass, and that the acreage in several lines of vegetables this year will be considerably increased. The association is anxious to secure more correspondents in the principal vegetable producing sections and is willing to pay for short monthly reports. The help of growers in making these reports valuable is asked. The following reports were written between April 20 and 24:

OTTAWA

"Cabbage and other winter stock are a drug on the market. Radish and lettuce sell for 40c. for first quality, and seconds about 25c. per doz., and market pretty well supplied. Strawberries badly winter-killed. Weather cold again and no planting or sowing done yet."—F. Williams.

"No outside work has been done. March was a very bad month for hotbeds. Everything is backward, but favorable weather will soon change that. The general plans seem to be for the usual crop, but much also depends on the planting season. The market is overdone with lettuce, as supplies are being shipped in and the local hotbed crop, also, is ready. Quantities of local green onions are on hand; also radish and rhubarb, the supply exceeding the demand. There has been very little change in the amount of vegetables grown under glass during the winter, but the quantity of glass used for the spring crop has more than doubled."—T. Mockett.

NAPANEE

"From data obtained from the canning factory the vegetable crops in this section will be about as follows: Tomatoes, 200 acres; sweet corn, 160 acres; peas, 60 acres; beans, 47 acres."—E. M. Sherman.

TORONTO

"It is too soon to report the prospects, as we have scarcely started to plant, and we cannot even guess at what we are going to have. With regard to the greenhouse work, I may say there has been a marked increase in greenhouse work. Within about half a mile of me, about 10,000 feet of new glass has been erected this year and a great deal more farther afield. Lettuce, I believe, is the principal crop grown in the new houses, but the demand seems to increase with the increased production, as there has been a ready sale right through the season."—C. Gibbard, Doncaster.

NIAGARA FALLS SOUTH

"Asparagus, green onions and rhubarb about a week or 10 days ahead of last year; first outdoor grown sold this week. Planting of early potatoes and peas general. Sowing of onions, carrots, beets, and other seeds in full swing. The ground is dry and works up nicely. Lettuce and cabbage are being transplanted outside extensively. All tender vegetables under glass owing to the open winter about 10 days ahead of last year. Tomatoes and onions will be less freely planted than last year by at least 25%. Several new greenhouses have been erected. All greenhouse stuff selling well and in good demand. Commercial fertilizers are more extensively used than ever before."—Thomas R. Stokes.

ESSEX COUNTY

"Tomatoes are growing very well under glass Apparently there will be an increase of 25% in the plantings. Some of the larger shippers are increasing their acreage, and some new men are starting in a small way, while some who grew them last season are out of it. Early cabbage is being planted in the fields; an increase of about 25% in this crop is likely. Wax beans will be in small supply. Red and green peppers will be grown in about the usual quantity, which

Classified Advertisements

Advertisements under this heading will be inserted at the rate of ten cents per line, each insertion; minimum charge fifty cents in advance.

LANDSCAPE GARDENING, PLANS FOR PARKS, cemeteries, public and private pleasure grounds made. Drawings made to a scale, so that any gardener may carry them out. Correspondence solicited. CHAS. ERNEST WOOLVERTON, Landscape Designer, GRIMSBY.

WANTED—Persons to grow Mushrooms for us in waste spaces or barns, in gardens, orchards or small farms. $15 to $25 per week. Send stamp for sixteen-page illustrated booklet on Mushroom Culture and full particulars. MONTREAL SUPPLY CO., MONTREAL.

FOR SALE—Old established tree nursery. Large connection and profits. Easy terms. Best sandy loam. Apply THOMPSON, 17 Queen St., St. Catharines. Also profitable fruit farms for sale on easy terms.

CHANCE OF A LIFETIME—Well-established Florist business. Greenhouses, House and Stable, for sale cheap. Apply 25 Triller Ave., Toronto.

HARDY PERENNIALS delivered prepaid by Mail or Express. Send 5 cents for descriptive catalog to the SPECIALTY NURSERY CO., GRIMSBY, ONT.

FOR SALE OR RENT—Two Greenhouses. Good condition, 300 x 23 ft. Terms Easy. F. E. and H. M. RICHARDSON, LITTLETON, N.H.

FOR SALE—One of the best business chances in Western Ontario, one acre of land with cottage, 2 large greenhouses, newly built, everything in first-class condition; in a city with about twenty thousand inhabitants. This is a fine opening for a wide-awake man to make money easily. Good reasons for selling. For particulars apply to J. P. Pitcher, Real Estate, Brantford.

C. H. KINGSLEY-BAILLIE, F.R.H.S. (Qualified Fellow of The Royal Horticultural Society of England), Consulting Landscape Architect. Plans, Drawings and Specifications prepared for the development of large and small properties both in town and country. Address: Winona, Ont.

WANTED—Young man with a few years' practical experience in a Canadian or American nursery. State particulars. Steady work and good opportunity for advancement to man capable with ornamental stock. THE WEBSTER FLORAL COMPANY, LTD., HAMILTON, ONT.

TRANSPLANTED
MAPLE TREES

For sale in quantity, from 10 to 14 ft. high, 1 in. to 2½ in. in diameter, in large or small quantities. Price on Application.

SCRIM'S OTTAWA, ONT.

Mention The Canadian Horticulturist when writing

is not large. Musk melons will be in good supply, as they usually are; the main crop will be Extra Early Hackensack, Osage, Paul Rose and Rocky Ford. Only a very few acres of sweet corn will be grown. Ten or 12 new greenhouses were erected last fall and winter, most of them being small. Some of the larger growers have installed hot water and steam heating plants, Mr. J. L. Hilborn using hot water and J. D. Fraser and E. E. Adams steam. Some experimental work has been done during the past winter in growing lettuce, with good results; more will be grown next winter. Messrs. Hilborn and Fraser are planting a considerable quantity of tomatoes and cucumbers under glass for early spring market."—E. E. Adams, Leamington.

KENT COUNTY

"The growing of vegetables in this district is not confined to the market gardener, but, to a considerable extent, is done by the farmers.

A. McMeans, of Brantford

Mr. McMeans is the v.-pres. of the Ont. Vegetable Growers' Association, and has recently been appointed to have charge of the vegetable department, under Prof. H. L. Hutt, at the Ont. Agricultural College, at Guelph. This is a department that has received but slight attention in the past, and which is to be considerably extended from now on, under Mr. McMeans' direction. At the request of the Vegetable Growers' Association, the department has sent Mr. McMeans to N.Y., Mass., and other of the eastern states to ascertain what work is being done there to encourage vegetable growing, and to visit the places of some of the leading vegetable growers. He is a capable man, and for years has managed his own vegetable establishment at Brantford. In his new position he should do excellent work.

Most of the potatoes produced are grown in Chatham township, but for several seasons the crop has suffered severely from blight. This year, however, the acreage will be largely increased and there should be some for export. Onions are grown only in limited quantities, an acre being considered a large patch. The acreage is about as usual. There is a disposition to go more extensively into early tomatoes and an effort will be made to find an outside market. A number of our gardeners are growing tobacco, and report larger profits than from vegetables. The acreage in tobacco will be large."—Fred Collins, Chatham

SARNIA

"Gardeners have not done much planting or sowing, the season being backward. The acreage in vegetables promises to be above the average and prospects for a good season are bright. There seems to be a feeling that early potatoes are the best to grow. I would not be surprised to see an increased acreage of 25%. However, some farmers are going to grow sugar beets, and this may lessen the quantity of early potatoes grown by them."—W. A. B.

Benefits of Organization

At a meeting of the Toronto branch of the Vegetable Growers' Association last winter Mr. Thos. Delworth, of Weston, outlined the benefits to be derived by organization and by becoming a member of the Ontario Vegetable Growers' Association. The purchasing of supplies such as boxes, twine, Paris green, and greenhouse fittings were mentioned as being worthy of consideration.

Boxes cost 14 cents each, or more, whereas a few years ago they could be had for $1.00 a dozen, with an extra box thrown in. It was suggested that a committee be appointed to go to the box manufacturers and see what reduction could be had if the members of the local association would agree to purchase their supplies from that factory. The association does not propose to buy these supplies but expects that an arrangement could be made so that by showing the membership card a reduction would be given on the regular prices. Each grower would be required to pay cash for what he purchased. The average grower in this section has to buy 50 to 75 or 80 boxes each season. It is not known where these boxes go, but through loss and breakages many new boxes have to be purchased each season.

The same was true in twine. The value of a single ball of twine was not very much, but the purchases of a season amounted to a considerable sum. During the past few years many growers in the vicinity of Toronto have erected greenhouses. Many instances were known where growers had gone to the firms that supplied boiler fittings and when the clerk found out that the prospective customer was not a regular dealer at that place, they either claimed that they had not the required line in stock, or if they sold them, three or four prices were charged. Something should be done whereby this injustice would be put to an end. The glass for these greenhouses should also be obtained at lower rates than at present.

By co-operation in getting supplies in these different requirements much could be done to lessen the expense to the individual grower. This is the practical way to show the growers that it is profitable to dealers to become members of the Vegetable Growers' Association.

As regards purchasing seeds, Mr. Delworth pointed out that it would not be satisfactory for the members to club together to purchase their seeds from any one house. Most growers have certain lines of seeds which they buy from certain firms each year, and it is difficult to get them to change and buy seeds from another seedsman. The gardeners were advised never to purchase cheap seeds. The only safe way is to buy the best seeds and those which are recommended. Then if the crop is a failure something should be done to make the firm who supplied the seeds make up the loss, unless the fault lies with the grower. Occasionally seeds are bought which are not true to name and instances are known when seed purchased as beet seed turned out to be mangels. The members of the association should unite to see that an example is made of such instances.

Regarding the crop reports which it has been decided to have published during the summer, Mr. Delworth pointed out that those who grow onions extensively would have saved considerable money last fall if they had known the exact condition of the crop in the different parts of the province. Many growers disposed of their crop at 85 cents because they believed there was a heavy crop throughout Ontario. Such was not the case, and as a consequence prices have soared to $1.15. Other crops cannot be held over as can onions, but the fact that a few crops can be held over is sufficient to warrant the growers in pressing for regular reports from all sections to be circulated to the members of the association. Mr. Delworth suggested that these reports be tabulated and sent out monthly through THE CANADIAN HORTICULTURIST, and by circular letter every two weeks.

More Experiments Needed

Ed. THE CANADIAN HORTICULTURIST:

In looking over the February number of THE HORTICULTURIST, I notice on page 38, that a gentleman from Hamilton asks a question regarding the production of vegetables in glass houses, and is replied to by Mr. Macoun of Ottawa. The reply is, as you will note, somewhat vague as to results. The matter of expense appears to be against their general production.

INSURANCE

The very best kind of Insurance—i.e., provision for the *future* as well as the *present*, is a Savings Account in

The

SOVEREIGN BANK

OF CANADA

Interest paid *four times a year.* $1.00 will open an account.

Put you money in a place where you can get it when you want it

57 BRANCHES THROUGHOUT THE DOMINION

Mention The Canadian Horticulturist when writing.

I do not believe that that question of expense is the whole thing. I am of the impression that our markets might be supplied to some extent during the *off* season, or cold months, providing our growers, commercial or otherwise, could obtain some reliable, honest facts as to the cost of production, the labor attached to such production, and the gross or net results of a season's work. *Facts* could be given also concerning preparation of the soil for greenhouse benches, how to prepare it, what kind would be preferable for different vegetables, what kind of fertilizers should be used for certain vegetables, and *why* certain fertilizers are used, etc.

The field is a large one and a good one for exploration. I have been doing something in it for my own satisfaction, and the idea suggests itself to me that after reading your editorial on page 40, *also* in this month's HORTICULTURIST, regarding the Guelph college work along these lines, that something should be done to further the general information on this subject for the benefit or profit of those who are in the business. *Why* should not this work be carried on as well as other experimental work, in connection with farm questions in general? I see no reason whatever for further delay, as life is short enough for most of us, and the sooner we get a move on, and give out something for the betterment of the world, the better. As to the Guelph results, I am, along with almost, if not all, the growers here, completely in the dark as to what is going on. It may be possible that a lot of good work is being done, but for some reason or other we do not get a trace of it, which possibly may be our own fault. However, we have THE HORTICULTURIST, and if anything is doing, apparently the results might be published in it, and a great many of those who are interested could then see for themselves what has been done.—E. E. Adams, Leamington, Ont.

I congratulate you on the recent changes and improvements in your valuable paper, THE CANADIAN HORTICULTURIST.—C. D. Jarvis, Cornell University, Ithaca, N.Y.

Fruit Experiment Station

While it has not been officially announced, it is generally understood that the fruit experimental farm the Ont. government purposes establishing in the Niagara district will be located on 50 acres of ground that has been offered to the government free of cost by Mr. M. F. Rittenhouse. This ground is located near Jordan. Mr. Rittenhouse is a well-known millionaire of Chicago, formerly of the Niagara district, who already has given a fine schoolhouse and public library to his old school section near Jordan.

It is understood that the government appointed a committee to inspect the soils, and see if this land would be suitable for the purposes of the farm, and that this committee has reported favorably. It is understood also that more land can be bought immediately adjoining at a reasonable price.

Presents for Our Readers

Our readers will be given their choice of the following premiums, when purchasing goods from our advertisers, if they tell them that they saw their advertisement in THE CANADIAN HORTICULTURIST: 3 months' renewal subscription to THE HORTICULTURIST; 1 Baby Rambler Rose; 1 Herbert Raspberry; 1 Boston Ivy; Book on Strawberry Culture; Collection of 6 Tuberous Begonias; Sweet-scented Calla Bulb; New Grape Vine; New Fern Nephrolepsis Piersoni; Large Size Package "Helen Pierce" Sweet Pea, new; New Dahlia "Mrs. Roosevelt," new; Book on Bulbs and Bulbous Plants; Book on Fertilizers; Book on Injurious Insects; Plant Diseases and their Remedies; Book on Onion Culture; Book on Tomato Culture; Book, Your Plants, House and Garden; Hydrangea paniculata grandiflora; Collection of 3 Canna Bulbs; Collection of 6 Garden Vegetable Seeds; Collection of 6 Garden Flower Seeds; Collection of 6 Gladioli Bulbs. No premium given to those whose purchase amounts to less than $1.00. To the reader purchasing goods to the greatest value from our advertisers in the May issue, we will give a $5 cash prize. It is no trouble to win a prize. Just tell the advertiser, when writing, that you saw their advertisement in THE HORTICULTURIST, and then make application to THE CANADIAN HORTICULTURIST for a premium. Write the Advertising Manager, THE CANADIAN HORTICULTURIST, 507-508 Manning Chambers, Toronto. Ont.

Items of Interest

The illustration of an apple tree in bloom, shown on the front cover of this issue of THE HORTICULTURIST, is that of an old Fall Pippin tree. Is is located on the lawn of Mr. C. Ernest Woolverton, at Grimsby, and was planted in 1798 by Mr. Jonathan Woolverton, the great-grandfather of Mr. Linus Woolverton, the former editor of THE CANADIAN HORTICULTURIST. The photograph was taken by Mr. Chas. Saunders, of Ottawa.

The Ont. government is considering the advisability of establishing experiment stations in Essex County. If a satisfactory location can be secured, experiments will be conducted in vegetables, fruits and tobacco. This move was recommended by the board of control of the fruit experiment stations at a meeting some time ago.

That it is becoming popular to advertise in THE CANADIAN HORTICULTURIST, is shown by the steady increase in our list of advertisers and by the increased space our old advertisers are taking. New advertisers in this issue are the Sovereign Bank and the Dominion Steamship Co. of Montreal. The Robt. Reford Steamship Co., of Montreal, and the Gerhard Heintzman Co., of Toronto, have each doubled their advertising space in this issue. How is that as a sign of progress?

I have been taking THE CANADIAN HORTICULTURIST for a number of years, and I must say it is very much improved of late.—Robt. Mitchell, Coleman, Ont.

MAY TIME
IS THE RIGHT TIME

In which to plant many of the beautiful shrubs and vines that MAKE THE HOUSE ATTRACTIVE

Our beautiful catalogue gives a large list from which the most particular planters can make a complete selection.

We ship anywhere in Canada and you may know when ordering from us you will receive just what you order.

Stock the Best Prices Right

The Helderleigh Nurseries

E. D. SMITH, WINONA, ONT.

Mention The Canadian Horticulturist when writing.

Eldorado Potato

SO PERFECTLY BLIGHT DISEASE PROOF, SUCH AN ENORMOUS CROPPER OF HIGHEST QUALITY, IT HAS CREATED THE GREATEST SENSATION OF ALL TIME

"Even so recently as September last, when Mr. G. Massey sold 14 lbs. of Eldorados for £20 ($100) people were amazed and incredulous; yet three months later the same gentleman received a check for £1,400 ($7,000) for 14 pounds of same variety."
FREE PRESS (London, Eng.), Jan. 19th, 1904

"Last April pot grown plants of the Eldorado potato sold at $52.50 each, one grower selling over $2,000 worth at this price."
RURAL NEW YORKER, New York, Aug. 24, 1904

"The yield of the Eldorado potato, the kind that brought the record price, is reported to run from 150 to 300 lbs. from one pound of seed tubers." RURAL NEW YORKER, New York, Jan. 14, 1905

PRICE $1 PER POUND

List containing history, photos of potatoes, checks paid, press opinions of 81 papers, etc., mailed on receipt of address. ELDORADO doubles your crop, and every potato a sound one. Last opportunity to secure some for this season.

Don't buy Fruit Plants until you see our list, greatest assortment, lowest prices, and highest quality.

SMITH BROS. Box 4 Beachville, Ont.

MEMBERS CANADIAN SEED GROWERS' ASSOCIATION

Mention The Canadian Horticulturist when writing.

Money Given Free to People who buy Goods from Advertisers in this Issue. See Notice in Advertising Columns.

THE WOODVIEW POULTRY YARDS
LONDON ONTARIO
BARRED PLYMOUTH ROCKS EXCLUSIVELY
At the great "Ontario" Show at Guelph, December 11th to 15th, 1905
WOODVIEW PULLETS WON
First in class open to the world; Special for best Barred Plymouth Rock female at the show: and the Canadian Barred Plymouth Rock Club's Special for best Pullet.
At the International Show at Detroit, January 6th to 11th, 1906
WOODVIEW BIRDS AGAIN WON
In competition open to the world.—First pullet; Second cockerel; Second cock; and Special for the best shaped male at the show.
OUR MALES ARE BRIGHT STRAIN FEMALES LATHAM STRAIN
the best obtainable. EGGS FOR HATCHING, $2.00 PER SETTING UP.
MATING LIST MAILED FREE UPON REQUEST CORRESPONDENCE SOLICITED
Mention The Canadian Horticulturist when writing. John Pringle, Prop.

Creighton Poultry Yards
OTTAWA, ONTARIO
CAREFUL breeding has produced in our yards a very high-class strain of barred Plymouth Rocks, and White Wyandottes.
The best for exhibitions or home use.
Eggs for hatching $2.00 for 13.
High percentage of fertility proved.
S. SHORT, Proprietor
Mention The Canadian Horticulturist when writing.

LYNNWOOD POULTRY YARDS
Barred Plymouth Rocks Exclusively
By careful attention and breeding pure imported stock year by year, I have produced in the "Lynnwood" strain that which is as near the standard as it is possible to get. Eggs from double mating: Pen No. 1, for Cockerels, $3.00 per 15. Pen No. 2, for Pullets, $3.00 per 15 or $5.00 per 30. The above Pens are special exhibition matings. Pens No. 3 and 4 are for exhibition Cockerels, $2.00 per 15. Pen No. 5 for utility, $1.00 per 15. A few Cockerels for sale. SATISFACTION GUARANTEED
SPECIAL PRICE ON INCUBATOR EGGS
S. E. LINDABURY
Simcoe, Ontario
Member Canadian Barred Plymouth Rock Club
Mention The Canadian Horticulturist when writing.

GLEN FARM
WHITE PLYMOUTH ROCKS
Bred for winter egg production, meat production, and also winners at Canada's largest shows
EGGS, $2.00 PER FIFTEEN
GEO. A. ROBINSON, St. Catharines, Ont.
Mention The Canadian Horticulturist when writing.

TREES AND ROSES
I have a surplus in Hardy Roses, Apple, Pear and Plum Trees, Flowering Shrubs, Gladiolus, Cuthbert Raspberries, and Carolina Poplar that I will sell now at give away prices. Write your wants.
A. W. GRAHAM St. Thomas, Ont.
Mention The Canadian Horticulturist when writing.

FLOWER POTS

Now is the time to order them for Spring trade. We have a large stock of all sizes on hand and can make prompt shipments.
Drop us a post card for Catalogue and Price List.
THE FOSTER POTTERY CO.
Limited
MAIN STREET WEST HAMILTON
Mention The Canadian Horticulturist when writing.

MARCHMENT'S
Sure Growth
COMPOST
Supplied to all the largest nurserymen and fruit growers in Ontario. Shipments made by car or boat. Prices reasonable.
S. W. MARCHMENT
19 QUEEN ST. EAST, TORONTO
Telephone Main 2841 Residence Park 951
Mention The Canadian Horticulturist when writing

Baby Rambler
In bloom all summer
PLANTING TIME
will soon be here. Have you placed your order for Trees, Vines, Shrubs, etc.? Do not delay. Remember, we can supply your wants at a reasonable price. For street, lawn or orchard. See *free* catalogue for verity and PRICES. Choice Seed Potatoes, etc. BARGAINS in Apple Trees for March. *Write us.* 26th year.
A. G. HULL & SON
CENTRAL NURSERY, ST. CATHARINES, ONT.

Best For Cheese Making.
Pure, uniform crystal. Dissolves slowly. Stays in the curd—not carried away in the whey. Makes a smooth, firm, delicious cheese that keeps perfectly.
Windsor SALT
Salting the curd is the most important part of cheese making. Start right, with Windsor Salt.
Your dealer has WINDSOR SALT, or will get it for you.

Have You Received One of the Premiums "The Canadian Horticulturist" offers to readers who purchase goods from advertisers in this issue? See page 135.

Will Build a Packing House

In a letter to THE HORTICULTURIST recently, Mr. W. D. A. Ross, manager of the Chatham Fruit Growers' Ass'n, discussed the benefits to be derived by forming a stock company. For the past four seasons this organization has been very successful in handling the fruit crops of its members.

"We had no warehouse," wrote Mr. Ross, "and wished to raise about $5,000 for the purpose of buying a site and putting up a building large enough to accommodate our business, which has largely increased in the last four years. We incorporated under the Cooperative Cold Storage Act, and are disposing of 200 shares at $25 each to raise necessary funds. The stock can be held only by fruit growers, and no one can hold more than 10 shares. Every member must hold at least one share. The management remains the same as it was. We simply incorporated without any other change, and with scarcely an exception the members have taken from 1 to 10 shares.

"We expect to make dividends by using our own culls instead of handing them over to an evaporator, and by handling fruit from outsiders. At the modest capital we are raising it will not require a great deal to give a substantial dividend. We have purchased another power sprayer, and will keep two in full operation if the crop prospects warrant us in doing so. We have secured a very good site, and intend building at once if there is a prospect of a fair crop."

POULTRY DEPT.

Conducted by S. Short, Ottawa

To be successful in hatching chicks either by natural or by artificial incubation strict care must be taken to start aright with the eggs. All the careful supervision and perfection of detail will count for nothing unless the eggs are well fertilized and contain healthy, normal germs. Nowadays, when the pure-breeds have pretty generally taken the place of the mongrel, more intelligence is given to the proper mating of the breeding pens and it is possible to get eggs, at a reasonable figure, from pens so mated.

For utility purposes the male should not be related to the females. Such relation impairs the vigor of the progeny. This will be shown by the germs developing until the 14th day, and then dying. The majority of those which mature will be undersized. It is well, before purchasing from any breeder, to ask for information on those points.

CARE OF THE CHICKS

In May, after the chicks are 12 hrs. old, place them with the hen in a coop at least 2 x 2 x 2 ft. with slatted front 2 in. between slats. Paint inside of the coop with coal oil or liquid lice exterminator an hour or two before placing in the hen. The latter should be dusted with insect powder. Give the hen a good meal before placing her in the coop, and she will be less fussy in her new quarters. The floor of the coop should be sprinkled with dry sand, coarse sand preferred. Add chick grit, fine ground oyster shells, or broken egg shells. This provides the chicks with gizzard material, and prevents bowel trouble.

The best position for the coop is on the south side of a building or fence. I arrange my own at the back of the lawn, and the chicks have the benefit of running over and picking at the tender grass shoots. The coop should never be placed, nor the chicks fed, with the old fowl, for the other hens will fight the mother hen and trample and pick, sometimes fatally, the chicks. The coop should be rainproof, and on very cold nights may be protected with

sacking or pieces of old carpet. It is wise not to give more than 10 chickens to one hen. It lessens the danger of the hen trampling them to death or of the weakly chickens being crowded out and chilled during the night. Renew the material on the floors of the coops at least weekly, and mix with it after the first week a little flower of sulphur. After the first day the hen may be liberated about 5 o'clock in the evening, and she will at once seek a place to dust herself, and after an hour's exercise will return to the coop for the night.

FEEDING

The first food given is stale bread moistened with milk and finely chopped onion added. The onion prevents bowel disease. Rolled oats may be given not more than twice daily. After the second day Puritan chick meal may be used as the chief diet, and the first mentioned food given occasionally. The Puritan meal seems to be a well-balanced food, and the chicks like it. It is expensive, but the chickens do so well that it is the best and cheapest in the end. After the first week small grains should be fed for the last meal. After four or five weeks the expensive special foods may gradually be discarded for the ordinary diet, unless the chickens are being forced for the fall shows, when it will be better to continue the food that produces the fastest development. Size is necessary to win. Skim milk may be used to advantage as drink, and also to moisten the meal fed both to the chickens and the other fowl.

FRUIT GROWING AND POULTRY

If it can possibly be arranged, the poultry should have the run of the apple and other orchards. The fowl catch the injurious insects. They eat all worm-eaten fruit, thereby destroying maggots that would eventually have developed into parent insects. Their constant scratching is a good form of cultivation, and the droppings are valuable fertilizers. When the main crop of fruit is about ripe the fowl must be shut off from the orchard. Fowl may be enclosed in the raspberry patch with similar benefits to both. Raspberries begin to ripen about July 1, and finish ripening about Aug. 15. Between those dates the fowl will have to be removed for they relish ripe raspberries. In the runs on a town lot black currants may be grown successfully. Fowl will not eat black currants until the currants are over-ripe. This gives an opportunity for the crop to be harvested before being eaten, which saves the trouble of removing the hens from the runs.

Items of Interest

At a meeting of the Burlington Horticultural Association on Mar. 31, the following resolution was drafted and forwarded to the authorities: "That this Association respectfully urges the Dominion government to use every effort to make such arrangements with the government of Germany as will admit of Canadian fruit, both green and dried, entering the German market on as favorable terms as the fruit of the United States, and that a copy of this resolution be forwarded to Hon. Sydney Fisher, J. E. Armstrong, M.P., and D. Henderson, M.P." Amalgamation with the Southern Ontario Fruit Growers' Association was considered, and a resolution was passed to join that association on the basis of one representative. D. Johnson, of Forest, and A. Gifford, of Meaford, gave interesting and instructive addresses.

Extensive work is being planned by the executive of the Grimsby (Ont.) Horticultural Society for this season. A civic improvement committee comprising H. K. Griffith, J. A. Livingston, John Brennan and Dr. Smith, appointed some time ago, have been doing energetic work in an attempt to get the citizens and the managers of the railway companies to assist in beautifying the streets and public

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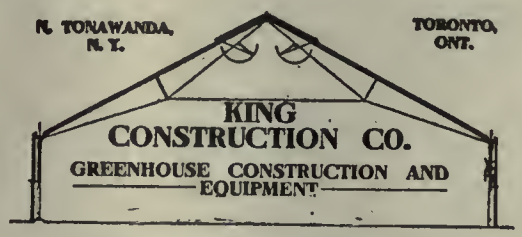

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Fi . 69

Fig. 63

THEY are fitted with new Patented Automatic Regulator that relieves the horses of fully one-half the usual load and greatly prolongs the life of the machine.

The entire machine is high-grade throughout.

All are fitted with Patent Nozzle Adjustor and will be fitted with our new Nozzle Protector, and when so fitted, all the adjustment as to height and position of the nozzles may be made by the driver while the machine is in motion.

Fig. 69 is arranged for vineyard work with 4 nozzles on each side.

Fig. 63 is the same sprayer showing the combination sprayer arranged for surface spraying. The change can be made in a minute's time.

Fig. 62 shows the bottom and top Potato Sprayer, 10 nozzles going at one time at 100 pounds pressure, and it's easy work for one horse. Will be fitted for two horses when so ordered.

Guaranteed for one year against faulty construction or material.

Has a capacity of 12 nozzles at 100 pounds pressure in continuous work.

It is the latest and best yet.

Fig. 62

Two types of Spramotor Hand Machines are here shown. Fig. 70 is placed as per cut, or on cask. It is our standard machine. It was awarded first place at the Government Spraying Contest and the Gold Medal at the Pan-American. Its sales are doubling each year, made in 3 sizes, of 2, 4 and 6 nozzle capacity, in all brass or brass working parts.

Fig. 64 is the new Horizontal Duplex Spramotor, is used on its own base or upon the tank. Is fitted with Duplex valves and automatic self-packing plungers. It's the only motor made with central valve chambers and two opposed cylinders. It is arranged for hand, horse power and gasoline power. Capacity 8 to 30 nozzles. Full particulars on application.

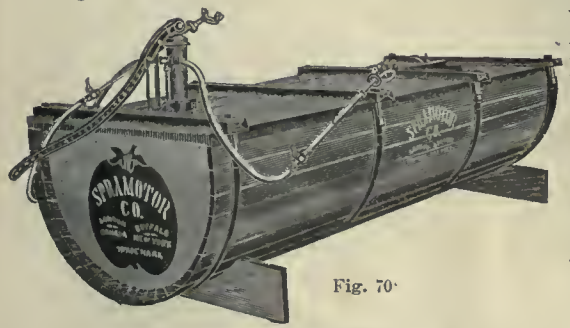

Fig. 70

Fig. 64

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places as well as the private lots. The committee will make regular tours of inspection to draw the attention of the citizens to small neglected spots on their properties, and to suggest a way of beautifying these places. It is proposed that a subscription list be opened, asking for donations of money, plants, flowers, bulbs, seeds, etc., to be used in brightening up the several public places that need it. An attempt will be made also to interest the teachers and children in the public schools of Grimsby and vicinity in the work.

The Corby Park at Belleville is to be remodelled and made more attractive. A Montreal landscape architect has looked over the park, and will prepare plans for ornamentation that will make it more creditable to the city.

A delegation of fruit growers from the townships of Clinton and Louth in the Niagara district waited on Hon. Nelson Monteith recently and asked that the new experimental fruit farm, which it is expected will be established in the Niagara peninsula, be located between Beamsville and Jordan. The members of the delegation were: A. H. Culp, W. S. Duncan, Wm. Fretz, J. Bennett and D. Moyer.

A report in the weekly Trade and Commerce report of April 9 from Commercial Agent J. B. Jackson, of Leeds and Hull, stated that there was a good demand for Canadian canned tomatoes. Fresh tomatoes are now extensively used in England. These are imported principally from the continent and the Canary Islands. They are much smaller and lack the flavor of the Canadian fruit; they are packed in oblong boxes, each tomato rolled in tissue paper; the boxes have a layer or covering of paper at the top and bottom. Each box generally contains 14 or 15 lbs. of fruit. For shipment purposes four boxes are always nailed together with thin laths. Mr. Jackson thinks that tomatoes could be shipped there from Canada in the autumn, and arrive in good condition. If so, they would bring the highest price in the market, and would easily sell at $4 per bush.

A company with $40,000 capital has been formed at Belleville for manufacturing sweet cider, cider vinegar, pickles, jams, and jellies. The directors are Sir Mackenzie Bowell, Messrs. R. J. Graham, W. J. Magrath, S. Burrows, and W. C. Springer. The directors elected the following officers: Pres., R. J. Graham; vice-pres., W. J. Magrath; sec.-treas., E. P. Frederick. The factory will be fitted up at once.

The large increase in the membership of the Western Horticultural Society in Man. during the past year, and the greater attention now being given to horticultural work has led the members to decide to hold a horticultural exhibition in Winnipeg. The attempt under the auspices of this society three years ago was most creditable. The display of fruits, flowers and vegetables was excellent, and many were the expressions of surprise heard from visitors, to the effect that they did not think such things could be grown in Man. Many of the exhibits were purchased to send away to the United States or elsewhere, where they were used with telling effect for immigration purposes. The exhibition, however, was a financial failure,

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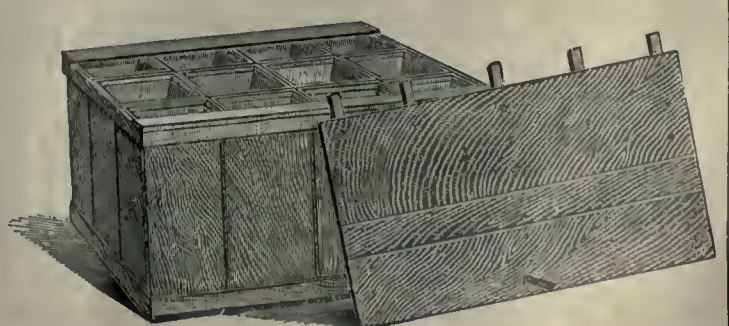

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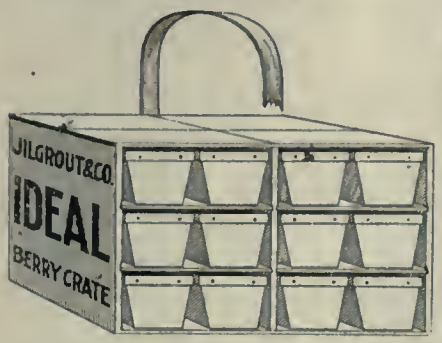

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and left the society very much embarrassed. It is hoped that the efforts this time will be crowned with success.

Probably the highest prices ever paid for California cherries were realized in Philadelphia, April 22, at a local commission merchant's establishment, where a box of fruit was sold at auction for $2,440, the funds to be devoted in aid of the earthquake sufferers in California. Each cherry was offered for sale singly, the first one selling for $105, and the others for amounts ranging from $100 down to 50 cts.

The revised copy of the report of the recent Dominion fruit conference recently held in Ottawa, is in the hands of the printer and will soon be ready for distribution. Copies may be had by writing to the Fruit Division, Dept. of Agri, Ottawa.

Mr. A. McMeans, of Brantford, vice-pres. of the Ont. Veg. Growers' Assn., assisted by some of the members of Parliament from the leading vegetable growing sections, had an interview with the Minister of Customs last month, regarding having an appraiser appointed to appraise the value of vegetables shipped to Canada from the U.S. Vegetables are often imported at ridiculously low valuations, and it is felt something should be done to protect Canadian vegetable growers. The interview lasted over an hour, and while little hope was held out that such an official would be appointed, it was intimated that it is the Government's intention to have a specific tariff in the near future which will be even more satisfactory to the growers.

Two more fruit dealers have been prosecuted recently under the Fruit Marks Act. They are Geo. Vipond, a Montreal merchant, who was convicted of violating Section VI, and was fined 25 cts. a package for all incorrectly stamped. and G. A. Allseybrook, of Burford, Ont., who was convicted April 14 for fraudulent packing, and was assessed $1 per bbl.

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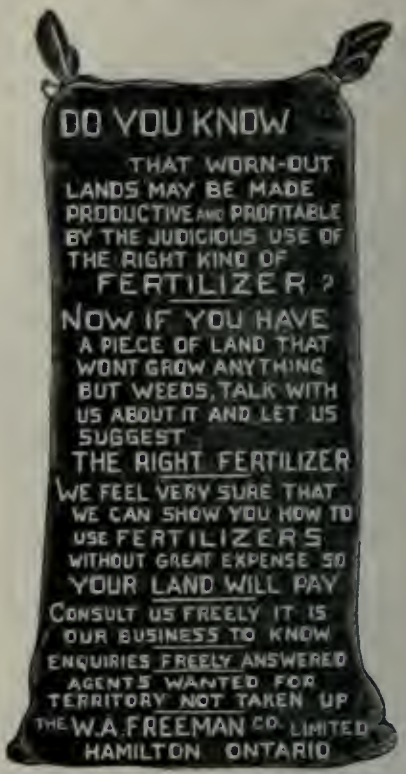

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The Canadian Horticulturist

Vol. XXIX JUNE, 1906 No. 6

Bearing vs. Non-Bearing Wood for Propagation

Joseph Tweddle, Fruitland, Ont.

FOR several years trouble has been experienced by many orchardists because their fruit trees fail to set good crops of fruit, and even in the case of a light crop, they may have a failure as to color and quality. The Northern Spy is, perhaps, the most common example of this. In most cases it fails to bear for 15 or 20 years, and then only responds with light crops of overgrown, colorless, punky specimens, without keeping quality. Other trees, and sometimes parts of Spy orchards, frequently come into bearing at six or eight years of age and bear regularly from that time on, producing medium-sized, sound, well-colored fruit, of excellent keeping quality. Some orchards of Spy trees have been procured, part from one nursery, and part from another, and after coming to maturity have presented these two extremes of bearing qualities, thus presenting a problem to the grower as to the cause of this great variation. Nevertheless, with the light of recent developments in the science of propagation, the solving of this problem is not such a difficult task.

Experiments have shown that in top working young trees with scions taken from Spy trees of the heavy bearing type, crops of good, sound, highly-colored fruit have been produced in a very few years, and the trees have continued to bear regularly. This clearly indicates the source of the trouble with these non-bearing orchards. The practice of so many nurserymen in propagating their trees from block to block in the nursery, taking the wood from the older blocks and grafting or budding the young trees year after year, probably in some cases without a break for 20, 30, 40, and even 50 years, is nothing more nor less than a perfect method of breeding non-bearing trees.

It must be patent to the ordinary observer that this is the source of the trouble. Not only is this tendency developed in the Spy apple, but, also, in all the moderate bearing varieties, such as Baldwin, Greening, Russet, and others. It is also true with the moderate bearing varieties of plums, peaches, pears, cherries, and even currants, especially the good old Black Naples, all of which come from the same source. The Black Naples currant is perhaps the most notable example of this. The country has been flooded with plantations of great, strong growing, barren plants of this variety, and after being cared for by years of patient toil, they have been found to be useless and had to be destroyed. Here and there, however, plantations of this variety are to be seen showing variations in productiveness, all the way from prodigious to medium, poor crops, and perfect failures.

The source of this, too, is not hard to find. This splendid variety when first disseminated was in great demand, on account of its all round excellent qualities and was procured at high prices, but in limited quantities, by the leading nurserymen. These were planted out in rank growing soil for propagating purposes only. These plants are known as stools, and the wood is cut off from year to year near the ground, so close that no fruit can be borne. This permits the energies of the bush to be expended in wood growing only. Wood is cut in this way from year to year, continuing in some cases for many years and the wood used for propagating.

Is it any wonder that we have the present conditions from such methods? Let us look at it more definitely. Is it not reasonable to conclude that these stools would naturally produce plantations less and less productive until entirely run out? Further, if these various plantations are the source of propagation of other plantations, would they not produce the same degree of unproductiveness as they themselves show? It was the writer's experience, several years ago, to have to purchase 1,000 Black Naples bushes from a reliable United States firm. They were guaranteed true to name, or money refunded. These plants were used to fill orders from growers. In due time they returned and demanded the refund of their money, as they all turned out to be this same worthless, non-bearing stock. Of course we were compelled to pony up, but on application to the producer, the head of the firm replied that this could not be, as he bought the original stocks from the introducer and had ever since propagated from the original stools. Since they were used exclusively for wood production, they must be true to name, but I was just as convinced that they were as untrue to the original type as possible. Another nurseryman told me he cut 20,000 cuttings from a row 20 rods long. We must conclude that this is an easy way to get wood for propagation, but to the grower, an impossible way to get fruit.

Would it not be well that a series of experiments be entered into and conducted by the Ontario Government with a view to the final and definite solving of the problem in its minutest detail? We do not think that the nurserymen are entirely to blame. Trees grown for years in succession from wood procured from nursery blocks, are much straighter and thriftier than those produced from scions taken from heavy bearing trees of the original type, and in nine cases out of 10 the grower will select the straight trees grown from the nursery wood and refuse the less thrifty looking trees, produced from wood off bearing trees. There is little encouragement for the nurserymen to take the proper course. Millions of dollars would be saved to Canadian fruit growers by a complete change of methods.

In the Ozarks region of Missouri and Arkansas if apples fail to bear at four or five years of age the foremost growers are resorting to the method of girdling the trees in June when the sap is thickening. A strip of bark two inches wide is peeled from the trees, girdling them just below the branches where it is most shaded from the sun. In 10 days or so

To the Forefront

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A. E. BURKE,
Pres. F.G.A. of P.E.I.

the thickening sap forms a new bark, but during this period the returning sap is by this means forced into fruit bud development for the next year's crop.

When the new bark is formed the tree carries on its natural process till the end of the season. This has a tendency to age the tree and throw it into regular bearing. They are following this process from year to year, and the highest authorities claim that they are getting the best results. Although it shortens the life of the tree, they get their profits in a shorter time with much less expense. It might be worthy of trial to test this on a small scale in these barren orchards, especially of Spy apples. It might be well to girdle a branch or two before going any further.

Various causes bring occasional failures under good care but not continuously with good bearing trees. Sufficient attention is not given to proper selection by the nurseryman when propagating, and the grower when purchasing must remember that the straightest tree may not be the most productive.

A Glimpse at the Cranberry Situation*

J. S. Bishop, Nova Scotia

PREVIOUS to last season, the last six or seven years have been full of discouragements and disappointments to our cranberry growers, so much so that very little effort has been made during this period either in the planting of new bogs, or keeping in repair the old ones. However, those who were not wholly discouraged were at the front last year with a snug crop of berries of most excellent quality. About 2,000 barrels of this fruit were packed and put on the market, where it met with a ready sale for from five to six dollars a barrel.

The failure of the vines to give a crop began with the coming of the fire worm. We were several years learning how to handle this pest. By the time this trouble was fairly under control we experienced a succession of frosty seasons, that either destroyed our prospect of fruit by killing the buds just before coming into flower, or chilling the berries early in September before they had attained a sufficient degree of hardness to withstand the cold that later would have helped to ripen them.

In the fall of 1902 we had every prospect of a good crop of berries up to within about 10 days of picking, when the sharp frost of September 6 nearly ruined them, so instead of a crop of 3,000 barrels or more, scarcely 300 came to maturity. Almost the same condition prevailed the following year.

Since then we have discovered a practical method of protecting the crop from early fall frosts, by covering lightly with coarse hay or straw. Hay is preferable, it causing less litter. About one and one-half tons to the acre is sufficient. This covering can be applied to the vines just before a frost is expected and allowed to stay during the remainder of the season. The berries then will continue to grow and ripen for three weeks or longer, thus extending the time of picking, besides giving a larger and much better quality of fruit. This method was put in practice by many of our growers last season and was the means largely of saving the crop.

Another very important idea has come to us of late in the way of gathering the fruit. The principle was first discovered by the Cape Cod cranberry growers three or four years ago, and is now in common use there. By the means of a large scoop the berries can be picked quickly, and at a cost of not over 10 cents a bushel, whereas by the old way of picking by hand the cost is from one to one and a half cents a quart.

The vines are trimmed and fitted for the picking the previous fall, with an instrument something like a hand rake, with sickle-shaped knives in place of teeth. By drawing this in the same direction all over the bog, the cross laterals are cut, admitting the easy working of the picker or scoop in the same direction. This scoop, with its long wooden teeth fixed side by side, gathers the berries in a clean and satisfactory way, and with most astonishing rapidity. On a good, clean bog, where there is a full crop of berries, a man can gather 10 to 25 barrels a day. This pruning of the bog is, also, of great benefit in removing a part of the old growth of vines and giving place to the new.

BOGS IN POOR CONDITION

Not one-third of our cranberry bogs are in anything like proper condition for giving a crop of berries. Bushes, grass, weeds, and shrubbery are to be seen on nearly all of them, and only occasionally a bog can be found that does not need a coat of sand. About half an inch of sand every two or three years is necessary to keep the bog in good bearing condition. A bog that is properly sanded rarely suffers from fall frosts, as the sand retains the heat of the sun, causing the vines to bloom earlier and maturing the fruit more rapidly than when no sand has been applied.

The old idea that you cannot have land too poor for cranberry culture has given way long since to the more reasonable view, that a crop of fruit of any kind cannot be expected from land year after year without giving the trees or plants something on which to feed. It is a thoroughly demonstrated fact that a bearing bog is greatly benefited by a yearly application of any of the commercial fertilizers that are used for raising potatoes. This fertilizer can be applied to the best advantage early in June. It should be sown broadcast when the vines are dry, using about 500 pounds per acre.

The question has been raised of late whether or not we were making a mistake in attempting to grow cranberries in Nova Scotia. In face of frosts and insect pests it has been asked if it would not be more profitable to turn our attention to something that would give a more sure return. May I ask what will give a more sure return? There are apple orchards along the centre of this valley that for the past three or four years, on account of frosts, have been as unproductive as the cranberry bogs.

We are slowly waking up to the fact that our bogs need a little care year after year, just as surely as our orchards do; and that a little intelligent attention will give about as good results on a bog as it will in an orchard.

In view of the increasing demand for this fruit and the prevailing high prices, our neighbors over the line are preparing to plant larger acreage to cranberries this year. It is also time we opened our eyes to the fact that all over the Canadian North-West there are cities springing up that will call for a supply of cranberries. Last fall we had orders from Winnipeg for several carloads that we could not fill because we had not the fruit. There are still problems to work out and much to learn regarding this industry.

Every cranberry growing country known is subject to frost. Insect pests are no worse with us than they are in other places. We have the land to grow the fruit and the market within our own Dominion. If the culture of this fruit has brought $10,000 into the pockets of our people this season alone, shall we pull up the vines and call a halt?

*A paper read at the last Annual Convention of the Nova Scotia Fruit Growers' Association.

Growers should ascertain what crops their soil is especially adapted to, and then make a specialty of those crops.—H. E. Reid, Toronto.

A Closely Planted Wealthy Apple Orchard

W. T. Macoun, Horticulturist, Central Experimental Farm, Ottawa

CONSIDERABLE interest has been shown in the results obtained from a small, closely planted Wealthy apple orchard at the Central Experimental Farm. There are 129 trees in this orchard, occupying about one-third of an acre, and planted in the spring of 1896. The trees were originally 10 by 10 feet apart, but a few have died. Full details regarding the returns from this orchard were published in the annual report for 1904.

In that report it was shown that the average net profit per acre from the time of planting was $54.13, and from the time of fruiting, $106.19. There was a heavy crop in the orchard in 1904, and the crop in 1905 was medium. The total crop produced was 1,247 gallons, of which 631 was picked fruit and 616 windfalls. Part of the windfalls were sold in baskets as they were good apples, and they brought fair prices.

These receipts and expenditures are estimated from about one-third of an acre (40-121) and the estimated figures per acre are given on the assumption that the percentage of sales in boxes and baskets would be the same from a full acre. A record is kept of the time actually spent in caring for this orchard and the other expenses incurred. Labor is valued at 15 cents an hour. There was no expense for cultivating since 1902, as the trees being close cultivation is impossible. The grass that grows is left to die down and rot.

As the trees were beginning to interlace, about half of them were severely headed back in the spring of 1905, and the remainder were thus treated this spring. The apples on the trees headed back were much larger than on the others, and while the crop was reduced somewhat, the greater percentage of marketable fruit compensated to a considerable extent for the loss of crop. The orchard received a heavy application of barnyard manure in December, 1904.

Sale of Fruit from Closely Planted Wealthy Orchard, 1905

		Estimated Per Acre
Sold, 203 baskets at 17½c	$ 35 52	$107 45
" 22 baskets at 20c	4 40	13 31
" 2 bags at 25c	0 50	1 51
" 42 boxes (Glasgow) at $1.46	61 32	185 49
	$101 74	$307 76
EXPENSES, 1905		
225 baskets and covers at $5.25 per 100	$ 11 81	$ 35 73
42 boxes at 14½c	6 09	18 42
Freight on boxes	14 94	45 19
Commission on sales	6 92	20 93
Rent of land	0 99	3 00
Spraying	2 49	7 53
Picking fruit	9 00	27 22
Grading and packing fruit	8 41	25 44
Barnyard manure (8 tons at 50c.)	4 00	12 10
Pruning	3 00	9 07
	$67 65	$204 63
Net Profit, 1905	34 09	103 13
Average net profit per acre per year, 1896-1905		59 03
Average net profit per acre per year, 1899-1905		105 75

Closely Planted Apple Trees in Fruit at Central Experimental Farm, Ottawa

(Photograph by Prof. F. T. Shutt.)

Pruning Plums and Peaches

"My system of pruning plums and peaches," said Mr. Jos. Tweddle, of Fruitland, "is to head in vigorously and thin out. While this system is more expensive than the ordinary system of thinning, without heading, I find it well repays the extra expense by the increase in the size of the fruit.

"This system has doubled the size of my plums and peaches especially, when the trees have been low in vitality. I also practise this on pears and apples, where trees are below the normal vitality. It invigorates the trees and brings them back into increased growth. Five years' experience has convinced me of the value of this method."

Apples must be grown successfully before much can be accomplished in selling. The greatest difficulty is experienced with growers who have 30 to 50 barrels, and who do not spray or care for their orchards.—D. Johnson, Forest.

Harvesting and Marketing Strawberries

MANY fruit growers who can produce excellent crops do not make as much profit as they should because of improper methods of harvesting and marketing. Some growers are careless, others do not know. With strawberries this lack of care and want of business methods is most disastrous. The sooner strawberry growers dismiss the idea that a gang of pickers, consisting chiefly of boys and girls with little or no experience, can attend to the harvesting the sooner will higher prices be obtained for their fruit. Personal supervision by those who understand the stage of maturity at which the fruit should be picked to reach the market that is being catered to, in proper condition, is essential.

The consuming public is constantly becoming more critical and a fruit of high quality is demanded. Growers who put up uniformly good fruit can find a ready market at all times and obtain the highest prices. If strict care is taken to see that the fruit is graded and the boxes filled and placed on the market in satisfactory condition, no worry will be caused because of low prices. To ensure that he shall receive due credit for the extra care, the grower should have his name or his brand or both clearly stamped on the box.

The method of disposing of the fruit will be regulated largely by existing conditions. If satisfactory help can be secured and a city is not too far distant it may pay best to make direct sales. If, however, transportation facilities are good and help is scarce the most advisable method of disposing of it would be through a commission house. The price obtained from the commission merchants may not at first be as high, but once a reputation for supplying high grade goods is established the price will be raised.

In a recent letter to THE HORTICULTURIST, Mr. W. G. Horn, a successful strawberry grower of Clarkson, Ont., wrote as follows:

"In gathering the strawberry crop all growers have to contend with more or less trouble in getting them picked properly. I believe I am within the mark in saying 25 per cent. of the strawberry crop is picked in a premature state on account of the pickers being more anxious to fill the boxes than to pick the berries properly. To have the berries at their best they should be picked every third day.

"In disposing of them we like to get them off our hands as quickly as possible on account of their perishable nature, and to have them looking as fresh as possible when placed on the market. We depend largely on the commission merchant for handling what we produce. Sometimes buyers are at the stations and buy them there for cash. It is almost impossible for the growers to market their strawberries individually.

SUMMER CULTIVATION

"It is difficult to have land on which strawberries are grown in too high a state of cultivation. Then it is important to keep the patch well cultivated and free from weeds before the runners make a start. The runners should not be allowed to become too thick in the rows or the rows to become too wide. A row 18 inches wide with strong, vigorous plants is the ideal one.

"If the patch has been a good one the first year, and the plants are vigorous, we keep it over almost invariably and occasionally a third year, but very seldom. The treatment for the same is to clean it thoroughly from weeds and mulch it with short, well-rotted manure during the winter. Long manure answers better on the new patch."

NOVA SCOTIA METHODS

In discussing strawberry growing in its different phases before the students at the Nova Scotia Agricultural College, Mr. J. C. Black, of Truro, one of the most successful strawberry culturists in Canada, dealt with the harvesting and marketing end. His address was in part as follows:

"I am a strong believer in intensive farming. There is no crop that will respond better to intensive cultivation than the strawberry. Those who are better acquainted with the productiveness of potatoes than they are of strawberries may be somewhat surprised to hear that an acre of land will produce as many bushels of strawberries as it will potatoes. I have grown 9,000 quarts per acre. The average, however, ranges from 3,000 to 6,000 quarts. The difference results from the condition of the land and the amount of attention given to the crop during the first season, Strawberries have been grown in many places to far exceed the above figures.

"In old land that is more or less overrun with grass or weeds it does not pay to keep the patch for a second crop, but on land that is clean a second crop may be gathered. As soon as the crop is harvested the land should be plowed and everything turned under and some crop put in to be plowed down in the fall. If the matted row system is adopted a new patch should be set out every spring and the old one plowed down.

"In harvesting the crop we pay, by the box, from one to two cents according to the state of the crop, and always try to get the most careful pickers. Sometimes one careless picker destroys more than he is worth.

"In marketing your fruit bear in mind that the market is never glutted with a good article. It is always the inferior fruit that spoils sales. If you have the best fruit and let people know it you can always get the highest prices and secure the best class of customers. Be sure always to have the best. It is a good plan to have your name stamped on the boxes. Do not use old and soiled boxes; let the other fellow have them. Insist on the pickers filling the boxes. Nothing disgusts a customer more than to see a dirty box only two-thirds full of half-ripe fruit or soft and mussy looking.

"There is no cause for alarm about a market for a first-class fruit properly picked and boxed. The more good strawberries people eat the more they want. If the local demand is not likely to be great enough you can always find some other town that is not supplied. If large enough quantities can be grown in any locality to make the venture worth while there is no reason why they may not be shipped to Montreal or even to Boston, as strawberries are scarce in those markets when our fruit is in its prime."

No Non-Suckering Raspberry

Do you know of a red raspberry that is a tip plant—one that will not sucker? I know the Columbian, but I refer to varieties producing red berries.—John Deegan, Meaford

There is no good non-suckering red raspberry known to me. The tip varieties are either black or purple, the latter being hybrids between the red raspberry and blackcap.—W. T. Macoun, Horticulturist, C.E.F., Ottawa.

There is no red raspberry that roots at the tip. They all sucker more or ess. The only garden raspberries that root at the tip are the blackcaps and hybrids between the reds and the blackcaps, like Schaeffer, Columbian, etc.—R. B. Whyte, Ottawa.

"I always apply fertilizer to the small fruit plantation in the spring. I use muriate of potash on my grapes because it stimulates fruit growth. Currants do not need so much potash. Nitrate of soda and barnyard manure give best results."—A. W. Peart, Burlington.

Russetting of the fruit is frequently caused in the early part of the season by two or three fine days following the spraying and then a rain coming. When the fruit becomes more mature no harm results.—N. Jack, Chateauguay Basin, Que.

Do not stir the soil under or about gooseberries, currants and Shaffer and Columbia raspberries. The former will drop their fruit, and the berries will fall off in yield if the soil is stirred. Mulch gives a full crop every time.—Stanley Spillett, Nantyr, Ont.

The Fruit Grower and the Robin

WITH the approach of the cherry season each year many fruit growers begin to worry over the devastation that may be wrought among the fruits by the robin. Some orchardists go so far as to assert that every robin should be killed; others look on this cherry lover with a more kindly eye and consider that the benefit derived from the same bird's destruction of insects more than repays them for the cherries he takes. Statistics from bird enthusiasts who have analysed the contents of robins' stomachs, show that only a small percentage of this bird's diet consists of cultivated fruits.

It is natural for living beings to prefer a mixed diet. The robin, being no exception to this law of nature, selects fruit to mix with his animal or insect diet. Cherries are ripe about the right time to furnish an appetizing food for the fully fledged spring brood, and if no other fruit is supplied he takes the cherry. If that fruit is to be found in great supply and of good quality it is but natural for him to break from his customary insect diet for a few days. At all times, however, it will be found that insects comprise the major portion of the food consumed.

Since the bird is a benefit to fruit men in so far as he devours the more destructive fruit enemies, the insects in various stages, should not something be done whereby robins can be kept in our orchards? Why not supply him with mulberries or wild cherries, or some such fruits, to satisfy his appetite for the fruit crop? A few trees near the groves or shrubberies which the birds frequent would do much to prevent them from taking the marketable crop.

THE HORTICULTURIST has received expressions of opinions from fruit growers in different sections of Ontario, as well as from Dr. Fletcher, of Ottawa. A few of them are as follows:

Dr. James Fletcher, of the Central Experimental Farm, Ottawa, who has given this subject much attention, writes: "I would most decidedly oppose any action on the part of fruit growers tending towards the destruction of the American robin, on the ground that these birds are beneficial, a consideration which affects the whole community. The only evidence against them is from fruit growers in the vicinity of towns. Such a question would have to be decided on the evidence of specialists who have studied the food habits of these birds, and not from the statements of any one class of the community who had been disappointed by the destruction of even the best specimens of one of their crops, unless these statements were backed up by proved facts concerning the food habits.

"Prof. F. E. L. Beal, Assistant Biologist of the United States Department of Agriculture, in discussing How Birds Affect the Orchard, says, 'The robin has often brought itself into unenviable notoriety by its depredations upon small fruits. Sometimes people who grow a few choice cherries do not get even a sample of the fruit, and those who raise fine strawberries for family use secure only a few boxes. On the other hand thousands of fruit raisers in various parts of the country are never troubled by robins, although these birds may be just as abundant in their vicinity as elsewhere.

'An examination of the stomachs of 500 robins collected in various parts of the country shows that cultivated fruit forms less than eight per cent. of their diet, and that practically all of this is eaten in June and July, while wild fruits form more than 43 per cent. of the year's food. Complaints have come from localities that lack those wild fruits which the robins evidently prefer—near cities, where such fruits have been destroyed, and in the prairie regions where they rarely grow, except in restricted areas along rivers.'

"Prof. S. A. Forbes, of Illinois, who made a careful investigation of the food of this bird some years ago, found that enormous numbers of injurious insects were destroyed by robins. He found that the total percentage of injurious insects eaten was February, 18; May, 37; March, 37; April, 39; May, 55; June, 24; July, 10; August, 31; September, 7; while the percentages of fruits and seeds eaten were June, 58; July, 79; August, 56; September, 70; October, 56. In June cherries formed 47 per cent. of the food.

"Mr. A. W. Butler, Ornithologist to the Geological Survey of Indiana, sums up this matter as follows: 'It is safe to say that noxious insects comprise more than one-third of the robin's food. Vegetable food was found to be nearly 58 per cent. of that eaten, wild fruits forming 47 per cent., and varieties that were possibly cultivated a little more than four per cent. They ate 25 per cent. of cultivated fruit in June and July. Wild fruit was eaten every month in the year. Small fruits and cherries that ripen early are almost the only fruits that are eaten to any extent. By July, and after that, there is an abundance of wild fruits that are more to its taste. The robin takes 10 times as much wild as cultivated fruit. The wild plants upon which it feeds most are not those gathered by man or adopted by him for cultivation. It would be well to plant a few extra plants or trees for the birds, or to plant a few of some such trees as the Russian Mulberry, to the fruit of which robins are particularly partial.'

"The above facts," concludes Dr. Fletcher, "are only a few of many that will have to be investigated by fruit growers who consider the robin an injurious bird."

AGAINST THE ROBIN

"Personally, I have no love for the robin," writes Mr. Chris. Firth, of Durham. "There are scores of other insectivorous birds that never touch fruits, and are never mentioned by writers on the subject. These birds are seldom seen chiefly because their nesting-places are destroyed. They are not driven away by the English sparrows, as most writers try to make out. There is no bird more libelled than this same little brownie, but he still lives, and probably will for some time to come.

"About 20 years ago, when I bought the place on which I live, it was a commons and one of the worst, not a tree on the part where I built my house. When the house was up I planted trees and shrubs all around where I thought they would be most effective as shelter, shade and ornament. Some evergreens are now nearly 30 feet high, and some of the isolated ones are beauties. They are mostly natives, such as balsams, spruce and pines. I still continue to plant. The consequence is a great variety of birds nest around my home. For 17 years I have permitted English sparrows to build in the roof of my house, just above my bedroom window, and on no occasion have I known them to interfere with other birds, some of which build within five yards of the house. These birds include warblers, chipping and song sparrows, catbird, kingbird, and others. The scarlet tanager I have not seen for years. The Baltimore oriole and rose-breasted grosbeak I seldom see.

"These are all more or less insectivorous birds. Their absence is due to the same cause—nesting places are destroyed. There is also another cause—the domestic cat. I don't keep them, and kill every one I find prowling around. Then there is the man with the gun who likes to be called a sport. If readers of THE HORTICULTURIST, and others, will plant more trees and shrubs, and then plant a few more, a great many of the birds would return and be of incalculable benefit to the fruit growers."

Mr. W. M. Robson, Lindsay: "It is easy to forget and forgive old feuds and depredations. If opinions were received from small fruit growers during the months of July and August, I fear the verdict would be against the robin. He does not possess compensating qualities equivalent to the destruction and damage done by him. He has a voracious appetite for cherries, strawberries, red currants, white currants, raspberries, peas and grapes. I am sorry to present such an indictment against one of the feathered tribe

which I would fain protect. If it is our business to loop off and prune out all that is detrimental, the robin must be *restricted*, and more valuable birds protected and encouraged, that the balance may be maintained."

Top Grafts on Tolman Sweet

W. T. Macoun, Ottawa

I planted out a young orchard of 70 Tolman Sweet apple trees last spring, with the intention of working them into Spys. They made a splendid growth last season. How long from the time of setting in the orchard till they would be ready to work over? Which do you consider the best way of changing them, grafting or budding? If by grafting, what way would be best, cleft, whip, or root grafting on the branches. Spys being my object, would it pay to mix some other varieties, and of what kind, for the sake of pollenation?—Subscriber, Northumberland.

As the trees made such a good growth last year they might be grafted with success this spring, but we should advise waiting for another year before doing the work, as success would be more assured and a larger proportion of the grafts be likely to take. For young trees such as these whip-grafting should give the most satisfactory results, and as this work would be done in the spring, buds could be inserted on all branches where the grafts had failed in the following summer. As budding gives just as satisfactory results as whip-grafting, budding could be done this summer and the grafting done next spring, where it was certain that the buds failed.

It would be necessary to have some other variety to pollenize the Spys, as isolated orchards of this variety do not produce much fruit. The Tolman Sweet would be an excellent variety for pollenizing the Spy, as it blooms about the same time, and it would not be amiss to leave a branch of the Tolman on each tree for this purpose. We believe that one reason the Tolman is such a good stock for the Spy is that it is a late bloomer, like the Spy, and thus ensures a good crop of fruit. There are few varieties that bloom as late as the Spy, but some of these are Cranberry Pippin, Canada Red, Westfield, Seek No Further and Grimes' Golden.

In the Niagara district the area devoted to grapes is rapidly increasing. It will not be many years until the already large plantings will have increased three or four fold. The Concord is still our favorite, probably three-fifths of all vineyards planted being of this variety, with Niagara second, and Vergennes, Rogers 9 and 15 following. Campbell's Early is promising, but seems to be exacting as to soil conditions. Large areas of heavy land a few years ago not considered suitable for the production of grapes have of late years proved to be the very best when properly drained and cultivated.—W. H. Bunting, St. Catharines.

An Increase of Forty Per Cent.

THAT reports regarding the development of the fruit industry in British Columbia have not been exaggerated is shown by figures sent by Mr. A. McNeill, chief of the fruit division, to THE CANADIAN HORTICULTURIST.

In comparing the crops of 1904 and 1905, it is stated that the crop of the past season has been much heavier, and higher prices have been obtained. The total fruit crop in 1904 was $600,000, whereas an increase of 40 per cent is noted for 1905, giving a total value of $1,000,000.

The fruit grown in the western province is being regarded with increased favor from year to year, and a good market has been worked up in Alberta. For early apples the grower netted $1.00 a box. Early in December the price had advanced to $1.25. An increasing demand has resulted in a further advance and the producers have received $1.50 a box. As a rule the strict laws regarding packing and shipping have been scrupulously obeyed. The shippers have shown intelligence in their methods, and honesty in their dealings, and this accounts in part for the great increase in their trade.

Tall Growing Ornamental Grasses

Roderick Cameron, Niagara Falls South, Ont.

IN last issue some of the grasses of dwarf-growing habit were referred to. They were suitable only for small beds or borders. In this issue I will describe a few of the best and hardiest of the robust growers. These can be used to advantage if put in large beds with broken outlines and set so that the plants of various heights will show a broken sky-line. The more irregular the outline of the bed and the more uneven the plants the better. The one will show off the other to advantage.

We will suppose we have a crescent-shaped bed to deal with. In the centre of the bed I would place a group of Bambusa aurea, the Golden Bamboo of Japan. On account of the bareness of its stems at the bottom, plant Bambusa metake. Variety aurea grows six to eight feet high, and metake, a dwarf grower, covers the lower part of the stem and the ground. I tried both of these outside last winter. Metake seems to be hardy, while aurea is perennial. The roots live and the tops die down. I would advise taking up the plants in late fall, and placing them in a cool cellar where they will winter in fine condition and be green for the following spring's planting.

Half-way between the centre of the bed and the end plant a group of Arundo Donax, the Great Reed of Europe. This plant grows 10 to 12 feet high. Along with it may be planted Arundo Donax glauca, a dwarf variety, growing only four feet high, with bluish-green leaves and stouter stems. Arundo Donax versicolor is about the same height as the last, but variegated with white. It is a very pretty plant, and should be put on the points of the crescent, leaving room for a border. All of the Arundos are hardy here, and should be farther north, particularly if protected. The best protection I find for them is to cut their own stems off about eight or nine inches from the ground and lay them across the bed. This and the stubs left will leave an air space over the crowns of the plants; over all put some coarse barnyard manure.

To give a finish to this bed, and to fill up all the spaces, we have four varieties of eulalias. Eulalia Japonica is the type. It is green, and grows five or six feet high, and is probably hardier than the others. Eulalia Japonica zebrina is the tallest grower and has yellow bars across the leaves, giving it a striking appearance in any position. Eulalia Japonica variegata has stripes of white and green running lengthwise with the leaves, making it also a much sought after variety. Eulalia Japonica gracillima is the dwarfest of the four, growing about four feet high. Its leaves are much narrower, with a white stripe running lengthwise with the mid-rib. All of them should be hardy farther north, particularly if protected as recommended for the Arundos.

A foot from the grass margin a border of Pennisetum longistylum should be planted. The Pennisetum may be grown from seeds each year, but I prefer taking up a few plants and storing them in the cellar until March, when they may be taken up and divided into many plants.

All these specimens look well if planted isolated in the grass near a path, beside a building, or in the hardy perennial border. They may be planted also in groups of one of each, or they make good centre specimens for a bed of other plants. An excellent effect is produced by planting these beside a lily pond. Pennisetum longistylum makes a grand border for a canna bed.

All produce their Pamphas-like plumes of flowers during the fall months, and are very desirable for drying and using for decorating the house during the winter.

Setting Out the Bedding Plants

WITH the arrival of June weather the temperature generally has become sufficiently high to permit of the majority of bedding plants being planted in the open. The main object in filling the beds should be to produce an effect that will be pleasing to the passer-by. The tastes of those in charge of planting vary so much that no two, perhaps, would make the same selections. Besides, the opportunities for preparing the plants will, to a certain extent, control the specimens used. If a greenhouse is at hand in which to propagate plants of all kinds, more variety can be had than if the plants are to be purchased in the spring.

In a recent interview with a representative of THE CANADIAN HORTICULTURIST, Mr. E. F. Collins, of the Allan Gardens, Toronto, discussed the most satisfactory plants for bedding purposes and the cultural conditions that produce the best results. The propagation of some of the plants commonly used for this purpose was dealt with by Mr. Collins in the January number of THE HORTICULTURIST. Those who have greenhouses will have a supply of bedding stock on hand, while those who have to secure their supply from a florist will be benefited by a review of his experiences.

"For bedding purposes on the average lawn," said Mr. Collins, "geraniums rank highest. For best effect they should be planted one to every square foot in the bed. A circular bed 10 feet in diameter would require about 75. The silver-leaved geranium, Madame Saleroi, makes suitable edging for a geranium bed. They should be set about 10 or 12 inches apart. Asters, phlox and petunias also are very desirable on account of the great display that can be made by using them, as well as on account of their cheapness. These plants should never be set closer than 15 inches apart. They soon spread to cover the whole space. Cannas, too, are excellent for bedding purposes. They can be placed two feet apart if the plants are strong, and will present a grand display of both foliage and bloom.

"Nasturtiums fill an important place in the average garden. They are rapid growers and produce a good effect. Except for geometric beds the coleus is being discarded. By using the different varieties a brilliant color effect can be produced, but a late frost gives them a ragged appearance that requires several weeks to overcome, and later in the season the mealy bug frequently becomes troublesome, and the plants are practically destroyed in many cases. The leaves often fall off and the bare stocks present a repulsive appearance. This insect pest cannot be kept down after the plants are set in the open. The woolly covering which nature has provided so protects the insect that any treatment that will destroy it also kills the plant. Irisenes, too, are suitable for color designs and patterns, but are not very commonly used. They are strong growers and free from insect pests. When set in the open they grow so rapidly that no damage is done by insects which are usually found on such plants.

"Begonias," continued Mr. Collins, "are very desirable for bedding purposes. When a bed is planted with some of the better varieties and edged with a plant of low growing and spreading habit, such as the sweet alyssum, the effect is very pleasing. The alyssum seems to have something that blends well with the begonias. Centaurea and such plants are not so suitable for edging beds of begonias. Beautiful effects can be produced on a large open space by planting a bed with yellow coleuses and blue ageratum. The plants should be set alternately with two coleuses to one ageratum. No matter how hot the weather the display is always attractive. Madame Saleroi geranium and the ageratum produce a similar effect. The plants should be set about one foot apart.

RIBBON BORDERS

"In making ribbon borders," said Mr. Collins, "the main point is to select colors that blend well. There is nothing better than pink, white and blue. Two rows of pink geraniums along the centre

Station Improvement Along the Line of The Canadian Pacific Railway

The Floral Department of the Canadian Pacific Railway, under Mr. N. S. Dunlop, is doing excellent work improving the appearance of the railway stations along the line of the railway from the Atlantic to the Pacific. This illustration is from a photograph of the station at Markdale, Ont. Mr. J. Caesar is the agent.

of the bed, with one row of blue ageratum on either side, and outside rows of Madame Saleroi geranium or sweet alyssum makes an elegant display. The whole object of the planter should be to present a pleasing effect from a distance, and not to have it merely satisfactory to those who are alongside the flowers. A most repulsive effect is produced by some gardeners planting bright red or scarlet geraniums against a red brick wall. If it is necessary to

Ribbon Border in Allan Gardens

have plants near the wall, caladiums or some such foliage plants should be planted, and then the scarlet geraniums will look well in front of the green.

"The plants used and the number of rows of each kind will depend largely on the size of the bed. Small beds with geraniums in the centre and one row of smaller plants around the edge is satisfactory. Beds larger than 12 feet in diameter should have two rows of edging plants. Cannas, caladiums and such plants should never be used in small beds. If there are no large beds in which to put them they will show up to better advantage if set next the house or some wall or fence.

PREPARING THE SOIL

"A bed that has stood all winter, and was left in good shape in the fall, requires no special fertilizer in the spring. If, however, tulips or hyacinths were planted, the bed will require a heavy coat of well-rotted manure before the bedding plants are put in. Cannas, Caladium asculentum, dahlias and such plants are heavy feeders, and need an extra supply of manure. The best results from dahlias are obtained by digging a hole about a foot deep, placing in three inches of well-rotted manure, and filling up with rich soil. The bulbs when planted in this soil develop rapidly, and the roots do not come in contact with the manure until they require it. Hydrangeas do well with this treatment.

"For most bedding plants a medium heavy loam is best. Light, sandy soils require too much watering. The heavier soil retains the moisture for a longer time. Nothing is better than an application of coal ashes. The soil is kept cool and moist in hot weather, and although they do not supply a great deal of plant food, there are very few plants that do not thrive well in soil with a coat of ashes added. Before planting the soil should be forked over deeply. If given a rest during the winter and spring it has regained much of the desirable qualities. Green manure should never be used, as the ground is hot enough during the summer, and the action of the green manure during fermentation develops more heat and cause it to dry out.

"Plants requiring support should be staked when they are set out. If the stakes are not put in when the plants are set there is danger of injuring the roots or bulblets later on. The plants should be tied to these supports frequently as growth develops.

INSECT ENEMIES

"There are numerous troublesome insects," continued Mr. Collins, "that have to be combatted by every gardener. The rusty leaves commonly seen on geraniums are generally due to attacks by the red spider. It is common on dry, sandy soil. This pest can be kept in check by thorough applications of cold water with the hose in the evening. On the ageratum, thrip is frequently found. Syringing with cold water or tobacco water destroys it. Perennials are often attacked by the black fly. A thorough treatment with tobacco water for two or three mornings in succession immediately after they are seen will keep them down.

"The nicotianas and mignonette have the common potato bug as an enemy. If this insect is not watched it will completely strip the foliage off the plant. Dry Paris green or syringing with Paris green and water is effective. The Paris green and water is more satisfacto y because it leaves less stain on the foliage. If they are treated as soon as they make an appearance they can easily be kept in check.

"On roses green fly is the most serious pest. Tobacco water is the most effective remedy, but if it is not used, constant syringing every day with cold water will destroy the flies and prevent others from coming. The cold water bath is specially efficient during hot sunny weather."

Flower Boxes for the Windows

DURING the hot sultry days of summer nothing in the form of plant life is more desirable for brightening the home than well-prepared and well-cared-for window boxes. If rich soil is used and the boxes are not made too narrow and too shallow, a brilliant display can be had during the greater part of the summer. The chief essential is that plants that retain their green and do not shed their leaves are used. Liberal watering is demanded every day.

The enthusiastic amateur can do all the work successfully, but for the average citizen it is advisable to secure the services of a local florist. Competition is keen, and there is little danger of exorbitant charges. Proper soil and suitable plants are sure to be supplied, because this department of the florist's trade is becoming extensive, and he is anxious to hold what he has and get his share of those who make a start each season. Those who do not care to leave the selection of specimens to the florist can secure whatever they require. There are scores of plants that give good effect, but coleuses, geraniums and nasturtiums are perhaps as commonly used as any.

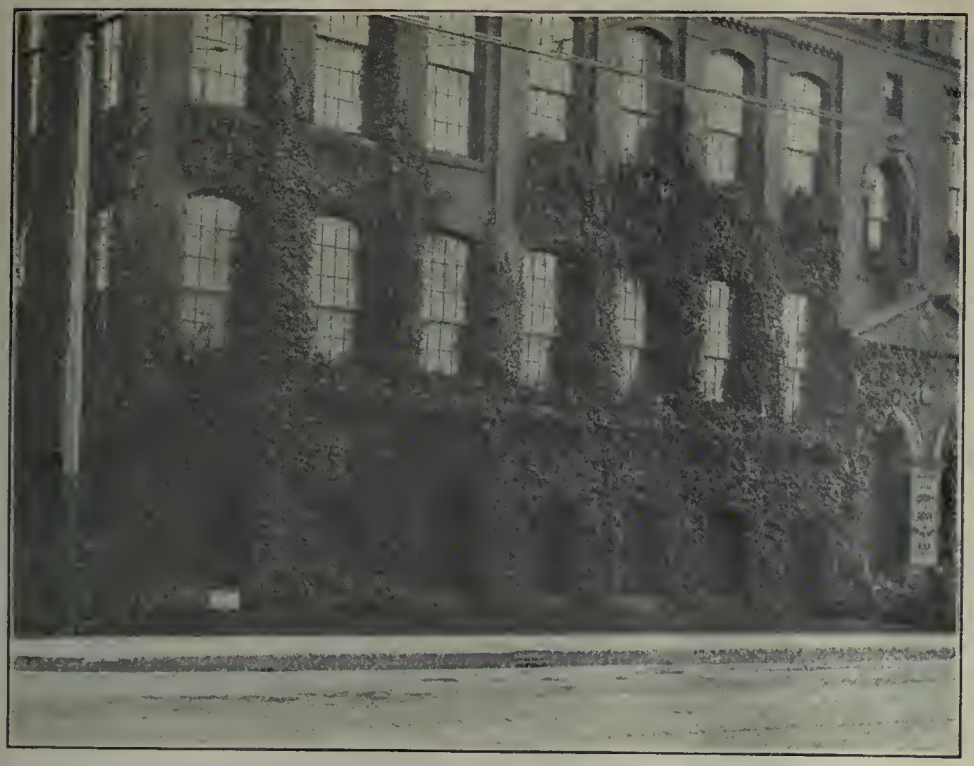
The effect of nicely decorated windows on one residence on a street is to cause others to copy the idea. The result is the whole street is given a more pleasing and a more attractive appearance.

An example of what can be done by means of such decorations is to be found at the beautiful home of Dr. Dryden, of Guelph. In a letter to THE HORTICULTURIST the doctor wrote:

"Window boxes are easily grown and require so little care that the results in the improvement of many homes are greater and more satisfactory than can be obtained for the same expense in any other method of culture, especially for those who have a small plot of ground at their disposal. The price is comparatively reasonable, and will run about one dollar per 4½ foot box containing a good variety of plants. That is 20 to 25 cents per foot.

"The boxes should be of good size, and the depth and width at least six, or better, seven inches, and filled with a loose rich mould that will take up and retain a lot of water. They will do better on a west or north window, as the heat from the sun is very hard on them on a southerly or easterly exposure. With the proper selection of plants they will give good results on the latter as well.

"The great object is to select plants that will retain their foliage and keep green or flower all through the season. The great and only secret in their care is plenty of water and applied every day, as they dry out so quickly from exposure to the sun and wind.



Toronto Factory made Beautiful with Vines and Window Boxes

"In selecting specimens I would suggest for bloom semi-double crimson geraniums, one to each foot in length; bright colored foliage plants, half as many as geraniums; two nasturtiums in a four foot box; in the front part of the box, for trailing or climbing, Cobæa scandens is the best vine, but the miranda is very good—say one of each. Many other plants might be suggested, but in our experience boxes filled with these have given much the best satisfaction.

"Boxes can be made of ordinary inch pine, and if painted a nice color, emptied out in the fall and put away in a dry place for the winter, they will last for years. Any one can make them as well as a carpenter.

"Our boxes are mostly sent to the florists about May 1 and the plants filled in, after which they are left in the greenhouse until May 20 or 24. Then they are safe from the spring frosts, and may be put up on the windows, and the warmth and protection from the nearness to the house keeps them green long after most of plants in the open are frozen.

"Any person who will take the trouble can easily choose the plants and fill the boxes himself, but it does not pay to do this in Guelph, as the florists do it very reasonably."

Give the children a flower bed to take care of. They will learn to love pretty things, and have implanted in their minds the ideas of order which time can never efface.—N. S. Dunlop, Floral Dept. C.P.R., Montreal.

Was Not Coffee

Frank Veal, C.S.I., of Bombay, India

My attention was called to an article in your valuable paper for March, headed "Coffee in Glengarry," in which a Mr. Gamble claims to have some coffee plants growing and bearing berries. This is utter nonsense, as coffee trees take three years to mature and to produce the berries known as coffee beans. Coffee will not grow in Canada, as it is a tropical plant and will not grow nor bear fruit in this country unless in a hot house.

The plant that is being grown by Mr. Gamble probably is the one known under the commercial name of Gram, the seed of which is roasted with coffee and used very largely for adulterating and flavoring coffee. Most people call it chicory.

If Mr. Gamble were to read Wm. Crashley on coffee cultivation in the Brazils, he would find that the coffee plant is a tree which often attains the height of 10 feet. It is not a vine. I have seen the trees growing in a small way in India, and they are much higher than four feet, and have branches the same as other trees. The pods of the real coffee contains only two beans, but sometimes there are three.

I came out from India to Canada to see if tea could be grown in this country, but find the climate would not suit. It was also my intention to grow coffee, cochineal and alloas, but none of these would be suitable. I have examined the ground carefully and find the soil also is not good enough.

Fungus on Wild Rose

W. T. Macoun, Ottawa

Is the black fungus growth on wild rose bushes the same as black knot of plum and cherry? The wild roses on my premises are covered with it. It is several years since it attacked the fruit trees.—C. W. B., Prescott.

The fungus on the wild rose bushes is known as the Rose Phragmidium and is distinct from the black knot. To eradicate this disease, which is a difficult one to deal with, it is necessary to destroy as many of the knots as possible, and then spray the bushes and the ground about the bushes, early in the spring before the leaves open, with copper sulphate in the proportion of one pound of copper sulphate to 25 gallons of water. The bushes should be kept sprayed until the middle of summer with Bordeaux mixture or ammoniacal copper carbonate.

Palms from Seed

A Toronto subscriber to THE HORTICULTURIST wrote asking for information regarding how to obtain palms from date stones. The enquiry was forwarded to Mr. Walter T. Ross, of Picton, who has had great success with tropical plants of different kinds.

In reply to questions regarding the time required to develop and general cultural methods required, Mr. Ross wrote as follows:

"The seed takes about nine months to start, but if cut or soaked in warm water, it will sprout more quickly. The plant afterwards requires only the ordinary care of a palm. The roots go deeply. I had pots made specially for palms, not so wide as the ordinary pot but much deeper to give the roots a chance. This proved to be a great advantage."

Sowing Aster Seed.—I have learned a lesson this spring about sowing aster seeds. We sow our seed too early in the season. I sowed mine the first of March, and before it was time to set them out the plants either grew too large or became stunted. They were in the house, and the necessary handling resulted in many of them being stunted and not doing well. The growth was very uneven. I believe that the first of April is plenty of time, and I am going to follow that rule in future.—C. F. Coleman, Burlington, Ont.

I prefer roses grafted on their own roots because those struck on wild roots sometimes die back, and when growth comes the wild shoots are the stronger, and the amateur is sure to keep one of the sort that is no use.—Edwin Utley, Toronto.

The Back Yard Beautiful

HOW many citizens of villages, towns and cities keep their front lawns in a presentable condition, but utterly neglect the back yard. Human nature seems to like to make a display for the public eye. Places, however, that are hidden from the view of the citizens at large are neglected, and, in many cases, are a disgrace to the owners. The reason for such neglect can be attributed to nothing else than laziness. The expense is so trifling that it needs no consideration, while the necessary labor can be done in the evenings.

No. 1—Before the Flowers were Planted

The flower enthusiast may select some costly specimens for curiosity merely to have something different from his neighbor, but for the average back yard such plants as nasturtiums, sweet peas, virginia creepers, wild cucumbers, etc., for covering bare walls and fences and columbines, larkspurs, peonies, the different varieties of lilies, phlox, alyssum and many other plants for planting in front of the climbers can be made to fill the bill admirably. The number of plants suitable for this purpose is legion. Even the common sunflower or hollyhocks and poppies would brighten things up and make it appear as if the place was inhabited by twentieth century citizens.

All who have the welfare of their families at heart should see that the back yard is as clean as the front lawn. In fact, more attention is demanded. As before stated, it is not necessary to go to any great expense. Anything, however, is better than the slimy, bare ground on which dish water and other slops are thrown. For sanitary reasons, if for nothing else, flowers should be grown. Think of the difference between the air coming from a garden bordered with vines and creepers, and dotted with annuals and perennials, or covered with fresh green grass, and that coming from many of the yards.

The educational value, too, must not be overlooked. Every member of every family should know more or less about plant life. The association and acquaintanceship with such forms of nature have an influence for good that cannot be measured. The children are easily made to take an interest. For experiment, buy a few nasturtium seeds, or sweet peas or sunflowers if you will; plant them, and the average child of very tender years will do the rest with very little coaching. Not much instruction is required to have the children do all the work, and the result will be a delight to every member of the family as well as to the neighbors.

"I want no bare ground on my lot," said Mr. Edwin Utley, of Linden street, Toronto, to a representative of THE HORTICULTURIST, who visited his place recently. "My favorite plant for back yard display is sweet peas. I always put a 5 x 4 scantling next the wall or fence and stretch fine poultry netting about five feet wide along for the peas to climb over. I frequently have them grow six or seven feet high. This year I have about 61 varieties. I have also used nasturtiums to good effect.

"Perennials, too," continued Mr. Utley, "can be used to advantage by planting taller specimens, such as rudbeckias, larkspurs, columbines, tritomas, cannas, lilies, gladioli, and others, at the back and lower growing ones near the front. Sweet alyssum makes an excellent plant for the front row. It is essential that the amateur gardener keep everything carefully labelled

No. 2—The Change a Few Plants Have Made

so that he can tell his friends the correct names. This year I have several new specimens, including hypericum, geum, galega and others. They are all hardy, and promise to be desirable additions."

The accompanying illustrations are from photographs taken in Mr. Utley's back yard. No. 1 was taken in the spring before growth had begun. No. 2 shows the same view during the summer. As far back as the tree had been sodded. In the spring the space behind the tree was seeded down to grass consisting of equal parts white clover, Kentucky blue grass and red top, and in two months a perfect mat had formed. A narrow path along the board fence on the right is hidden by sunflowers. At the back nasturtiums are supported by wire netting. At the front on the left a brilliant effect was presented by sweet peas on the wire netting, cannas, salvias and geraniums next, and a row of ageratum and one of sweet alyssum along the front. Here and there on the lawn behind the tree, dahlias were planted. Holes one foot square and 18 inches deep were made and filled with a mixture composed of equal parts of sandy soil, rich loam and well-rotted manure. One of the dahlias, Madame Vander Dael, produced bloom 8½ inches in diameter. In the foreground is a caladium in pot. No. 3 shows the clump that appears in the left hand corner of No. 2. The sweet peas have not attained full growth, and do not cover the netting. The tall clump in the extreme right hand corner is rudbeckia, golden glow; Mr. Utley is standing on the steps.

No. 3—One of Mr. Utley's Fine Clumps

Preserving the Beauty of the Lawn

THE members of the Toronto Horticultural Society who attended the monthly meeting in St. George's Hall on May 8 to hear Mr. Wm. Hunt's address, received many valuable hints. The only regrettable feature of the meeting was that more did not turn out. President Frankland was in the chair. Before the address resolutions were passed deploring the mutilation of trees by telephone and telegraph companies. A ladies' committee, comprising ladies who are horticulturists, will be formed to aid in the work of the society.

Mr. Hunt complimented the executive and members on the resolutions passed and the steps taken to bring before the proper authorities the matter of the indiscriminate butchering and mutilation of shade trees in cities and towns by the employees of the telegraph and telephone companies. He hoped that every horticultural society in the province would assist in this matter. The spirit of civic improvement and the beautifying of public grounds and streets, as well as of home surroundings, had taken a great hold on our people, and it was oftentimes very discouraging that the scenic and landscape beauties of our streets should be marred and destroyed as they sometimes are from the causes mentioned. Often the civic authorities were, to a great extent, powerless in the matter.

In dealing with the subject of his address, "Among the Plants and Flowers in Spring-time," Mr. Hunt proved himself at home, and gave much useful and seasonable information.

As a remedy for the prevention of trespassing and cutting across corner-lot lawns, the speaker suggested a rockery built diagonally from the intersecting points of the sidewalks to a point far enough from the sidewalk to prevent trespassing. A single plain wire could be stretched along over the top of the centre of the rockery, the two forming a most effective barrier to the too common and destructive practice of cutting corners by pedestrians. The rockery could be planted with ferns or creeping plants, such as vincas, nasturtiums, etc., and a few tulips and other bulbs could be planted in the fall to help brighten up the rockery in spring-time. Where the rockery had been tried as a barrier to trespassers it had proved most effective, as well as adding to the attractiveness of its surroundings.

Another point in the spring care of lawns was the difficulty in getting a lawn roller. The roller is an indispensable article in making and keeping a good lawn. The speaker recommended a flat pounder about eight or ten inches square, made of two-inch planking with a long handle, as a substitute. This pounder for a small lawn would be found as effective as a roller if properly used. The old-fashioned lawn mower with roller attachments was of great service. For a small lawn a mower with roller attachment, especially where it was difficult to obtain an ordinary lawn roller, was recommended.

A lawn rake and a long-handled weed-spud were also indispensable articles in the care of a lawn. A good weed-spud could easily be made by attaching an ordinary broom handle to an old socket-handle carpenter's chisel. A lawn rake was useful in many ways, where an ordinary garden rake would not answer. It was useful for dragging over the lawn in the spring to remove creeping weeds, moss, etc., as well as to drag up the roots of noxious weeds, such as dandelions and plantains, when the roots had been loosened with the weed-spud. These implements saved backaches and made this usually troublesome feature of lawn-keeping a pleasure rather than a laborious task, as is the case when these weeds have to be removed with an ordinary knife. The lawn rake was

A Prize Winning Deseronto Garden

Many members of horticultural societies and readers of THE HORTICULTURIST retain a professional gardener to attend to the lawns and plants. This illustration shows the grounds of Mrs. T. B. Gaylord, of Deseronto. In the competition of the society in that town this lawn was awarded first place.

also useful for removing the buds of the dandelion flowers, thus oftentimes preventing the necessity of mowing them, as well as removing them before there was any danger of their having flowered or seeded. It was only a duplicate of the old English daisy rake, an implement seen on every well-kept lawn in England, where good lawns are one of the greatest features of the grand landscape beauty so noticeable there.

A good spring fertilizer for lawns was that recommended by Mr. Alexander, of Hamilton, made by mixing four or five pounds of bone meal with one pound of muriate of potash and sowing it thinly over the lawn. The quantity mentioned was sufficient for a lawn eight or ten feet square. If an equal quantity of dry fine earth could be added to the above mixture it would add a little substance and aid in the more even distribution. The soil must, however, be dry so as to mix thoroughly before using with the fertilizer.

The best mulch for autumn application on a lawn, the speaker considered, was a mixture of equal parts of well-rotted barnyard manure and some fairly good loamy, friable soil. This was the mulch used very commonly in England, and gave not only the fertilizing property of a mulch, but also added a permanent substance to the lawn. It not only helped to enrich, but also filled hollows in the surface of the lawn and furnished material for any lawn seeds sown in spring to germinate and grow in. The mulch of long manure, as sometimes applied in fall, was unsightly and frequently produced a big crop of weeds. The earth mulch mentioned could be applied early in spring, also, very effectively.

Mr. Hunt also gave very many useful hints as to the care of window plants, etc., during summer, care of spring flowering bulbs, etc., pruning and care of roses, flowering shrubs, and many other seasonable matters. Numerous questions were asked the speaker, and answered satisfactorily.

The speaker was tendered a hearty vote of thanks. At the next meeting, June 5, Professor Hutt, of Guelph, will discuss "Improvement of Home Surroundings."

BULB DEPARTMENT

Questions answered by Mr. Hermen Simmers

Gladioli Planting

When should gladioli be planted? How can I have a succession of bloom? How deep should the bulbs be planted?—H. O. S., Simcoe.

The time of planting is in May, and the blooming period from August to October. I have experimented planting gladioli as late as the end of June, and in almost every case they have bloomed in October with every success. The greatest difficulty in planting in late June is that the corm does not have such a good opportunity to make sufficient development to preserve it thoroughly for the following spring. The flowering, however, is just as good as if planted early, and perhaps if new bulbs were purchased each season, better results in blooming would be the result, with less chance of deterioration than when the bulbs are preserved for another season. When the leaves of the trees are beginning to come out, is a good indication that nature is ready to go ahead and similar growth for the gladiolus will take place. Planting would be as well to be made two to three weeks apart to have a succession of bloom.

By cutting the stem when the bottom flower has opened and placing it in water the spike will produce flowers three to four times as long as if allowed to bloom altogether on the plant. Plant the bulbs three inches below the surface of the ground, or if planted shallower, hoe the earth up to give better chance for plant development.

Scotch Thistle on the Lawn

The accompanying illustration represents a specimen of Scotch Thistle grown on the lawn of Mr. Philip Love, of Barrie. When fully matured it stood 10 feet high and was 7½ feet in diameter. Some of the leaves were 4 or 5 feet long and 18 to 20 inches wide. This fine specimen was a centre of attraction in Barrie.

In a letter to THE HORTICULTURIST Mr. Love says this plant is very slow to grow. Being a biennial, it requires two years to mature. Seed planted one season comes up the next, and the plant makes 18 or 24 inches growth. In the fall this dies, and when growth comes

A Huge Scotch Thistle.

next spring it again grows and reaches maturity before winter comes. Thus, to have large specimens continually, young plants must be kept each year.

Very rich soil is required, and liberal watering should be given. This abnormal specimen was grown where an old water-closet had stood. In making the lawn Mr. Love levelled the ground and planted the thistle seed which developed into, what he terms, "the best Scotchman ever grown in Canada." As the root goes almost straight down, plenty of plant food considerably below the surface soil is required. Applications of manure water are practically worthless. It should not be planted in a shady place.

Vegetable Growing in New York and Massachusetts

A. McMeans, Agricultural College, Guelph

As a result of the request made some time ago by the Ontario Vegetable Growers' Association, that the Department of Agriculture should send some person to investigate the work being done by the experiment stations, and to visit also a few of the leading commercial establishments in New York and some of the New England states, I was recently sent by The Department on such a trip. I left Guelph April 12, and was away for one week. During my absence I visited the New York Experiment Station, at Geneva, N.Y.; the Cornell Agricultural College, at Ithaca, N.Y.; the Hatch Experiment Station and Massachusetts Agricultural College at Amherst, Mass., and leading vegetable growers in the vicinity of Boston, Mass., and Rochester, N.Y.

While indirectly the agricultural colleges and experiment stations at these points have been of great value to vegetable growers, none of them, excepting possibly the experiment station in Massachusetts, have devoted special attention to experimental work for the benefit of vegetable growers. They all realize, however, the need for more work of this nature and are asking for increased grants to enable them to undertake it.

The practical fruit growers, whose places I visited, are conducting their work on a scale of such magnitude as to be undreamed of by the growers in Canada and they are still enlarging their plants. Canadian growers who are thinking of raising vegetables under glass on an extensive scale, would find it a most profitable trip could they visit their greenhouses.

WORK IN NEW YORK STATE

The New York Experimental Station is situated on a nice slope, about a little over a mile from the City of Geneva. The soil is a clay loam. I met Dr. Jordan, who handed me over to Prof. Hedrick, who is the horticulturist, and whose work has been devoted chiefly to fruit. There are two houses, about 20 x 50 feet each, devoted to vegetables. The houses are old and they are asking for new ones.

One house is devoted to head lettuce, of which 32 varieties were tried this season. Mills seedling is about the best, but they are not nearly satisfied yet. Leaf turn has caused considerable trouble. The other house is devoted to cucumbers, grown from seed, without handling or transplanting. The test is not proving satisfactory. They took off a crop of tomatoes from this house early in the season. The average weight per plant of 148 plants was 11 pounds; variety Lorillard. About two acres are devoted to a garden which is used chiefly to supply vegetables to the directors and others connected with the station.

THE MASSACHUSETTS STATION

At Amherst, Mass., Prof. Brooks introduced me to Prof. Stone, who took me in charge, with the excuse that they are not doing the work they should, as their houses are old and they are asking for an appropriation of $15,000 to rebuild at the experiment station and college. At the station there are three houses devoted to experimental work, chiefly in vegetables, especially tomatoes and cucumbers. Experiments have been conducted in sub-irrigation, sterilizing the soil, and in the application of electricity through the soil, and in charging the air. Electrodes in the soil proved beneficial on lettuce and radish. Sterilization of the soil proved of benefit to lettuce. Sub-irrigation was good for both lettuce and tomatoes.

At the Agricultural College, I met Prof. Waugh. Everything is on a commercial scale, flowers, fruit, vegetables and nursery. The students do the majority of the work at 12½ cents per hour. Thousands of vegetable plants were for sale. The houses at the college are devoted chiefly to flowers. Everything is sold and prices rule very high. Some opposition has been raised by the local trade to commercialism on the part of the college.

WORK AT CORNELL

At Cornell College, situated on a hill overlooking the City of Ithaca, N.Y., I found Prof. John Craig, an old Canadian, who took me in charge. The soil is a very heavy clay and unfitted for the carrying on of experiments with vegetables outdoors. The result is that they do their experimental work with the commercial men, in some suitable location. When growers are having trouble with their crops and write the college a member of the staff visits the grower's place and gives all the assistance possible, remaining for several days when necessary.

They have been carrying on some experiments with acetylene gas, using it for lighting purposes and running it at night to watch its effects on vegetables, chiefly beans, under glass. The results this year have not been satisfactory. They have a very nice setting of fruit, with their tomatoes, and find Lester's Prolific and Climax to have done the best.

The best object lesson I received on my trip was in the commercial centre, near Boston. The magnitude of the industry and the number and size of the vegetable forcing houses at Arlington, Belmont and other suburbs of Boston, is almost beyond belief. The largest of the Rawson greenhouses, at Arlington, attains to the great size of 50 x 400 feet, with frames of glass 20 x 30 inches. Hittinger Bros., at Belmont, among others, have one house 40 x 600 feet. There are many other establishments in the vicinity with houses nearly as extensive. Among others, I might mention Wyman Bros., Allen's, Tappan and Scane.

These people grow acres of lettuce, cucumbers, radishes, etc., in the winter, and exchange this product for bank accounts. Now, just a word as to why these men have been successful, and why it cannot very well be duplicated in Ontario. In so far as I could see, the element of success with the Yankee lies in his thoroughness. Nothing is too great for him to undertake, nothing is too small for him to neglect. To give an instance of detail: Hittinger Bro.'s large house, the one I just mentioned, was planted to cucumbers, trained to single stem. All laterals and tendrils were removed every other day. It is just a little thing, but it spelt success.

The Massachusetts type of house is what is known as the three-quarter span, running east and west, about five feet high on the south or long side, 15 feet to the ridge and about 10 feet of wall on the north side. Ground beds are used exclusively. The general plan is to grow two or three crops of lettuce, followed by cucumbers. The Boston lettuce grower begins operations in his forcing house on the following general plan. He first prepares his ground by watering thoroughly and digging into it about three inches of well-rotted horse manure. Then he sets out transplanted lettuce plants about eight inches apart. Should the beds become very dry, they are watered with a hose with no nozzle, giving a gentle stream of water. They try to place the water between the plants, keeping the lettuce itself as dry as possible. As soon as the lettuce covers the soil, all water is withheld until about two days before cutting, when it is watered freely to add increased weight and texture. After the lettuce begins to head the temperature at night is kept down to 40°. During the day it often runs up to 60°, but plenty of air is given. After cutting, the house is thoroughly fumigated, the soil saturated with water, and the process repeated.

A leaf from Mr. Rawson's note book, as I copied it from the wall of a greenhouse, regarding one house, may not be amiss: Lettuce, first crop set Oct. 11, 1902; second crop set Dec. 20, 1902; cucumbers set March 7, 1903. For

each of the two crops of lettuce grown, a very heavy coat of well-rotted manure is used so that when the time comes for cucumbers, the soil is well supplied with plant food. But this is not enough. Trenches about a foot wide and 18 inches deep, are dug from end to end of the house. Fermenting manure, to the depth of 10 inches, is then firmly packed in the trench, after the manner of hot beds. Soil, to the depth of eight inches, is placed on the manure and the general level restored. Cucumbers from six inch pots are then planted from three to four feet apart in these trenches, and are trained on trellises. The trellises are made by using A-shaped trusses of iron or wood (V-shaped at the row, but A-shaped as to the way the trusses or supports are constructed) reaching from the bed to nearly the glass, with wires eight inches apart running lengthwise of the house. The vines grow with great rapidity and are tied to the wires with string or raffia. When the work is well done, the fruit can be gathered from the underside without difficulty.

Anybody who will put their love in the work, who will take the pains and trouble, study conditions and be as thorough in their work as the easterner, should be able to duplicate their success. For the past five years I have been a convert to the ground bed, but after what I saw east, if I had any doubts, they were expelled, for I feel firmly convinced that for the growing of lettuce to produce a superior article, the raised bench is a thing of the past.

A BIG INDUSTRY

In the vicinity of Irondequoit, a suburb of Rochester, I should say there are over 100 different greenhouse plants, ranging from 1,000 to 500,000 feet in each plant, used exclusively for lettuce and cucumbers. It is all Boston Head lettuce which is followed by cucumbers. The majority train their cucumbers to single stems and let no fruit set until they reach a height of six or seven feet. They are planted three by about seven eet apart and trained, on twine, until they reach the desired height, when they are allowed to run overhead. All laterals and tendrils are removed. They use a cross of White Spine and Telegraph. As a result of my trip I was able to gather much valuable information that I believe can be made of value to the vegetable growers of Ontario.

To fight blight successfully potatoes should be planted wider apart than they require to be when there is no danger of this disease.—Jas. Dandridge, Humber Bay.

In growing vegetables under glass it is not sufficient merely to keep the plants from freezing; they must be kept growing or loss will be the result.—H. E. Reid, Toronto.

Home Made Cement Tile

OFTENTIMES when fruit or vegetable soils need underdraining, the work is neglected on account of the cost of tile. Many undrained soils would be drained if tile could be made at home. Ordinary six-inch tile costs about $45 per 1,000, and even at that high price they can scarcely be had. Brickmakers say they are not convenient to make as they take up too much space when drying.

These tiles can be made at home at odd times in winter and spring. Such work is a good means of profitably employing labor in the slack season, and of retaining skilled help that otherwise might be lost. Mr. C. E. Secord, of St. Catharines, makes his own tiles and makes them of cement, at the low cost of $15 per 1,000. During a recent interview he showed the writer the apparatus, and explained how the work is done.

THE APPARATUS

The bottom of the apparatus is a 3-inch plank about 12 in. wide and any length desired, say 18 ft. A heavy plank is used so that there will be no "spring" or "give" when weighted with the tiles. On this plank is placed a number of circular pieces of sheet iron (the bottom of the moulds), 8 in. in diameter, with a small hole in the centre sitting on a pin, or brad, driven into the plank 12 in. apart, and protruding upwards about 2 in. Around this sheet iron disc are a number of stout wire brads driven into the plank to hold the mould in place.

The mould consists of an outer "shell," made of two pieces of common sheet iron, 12 by 15 in. each, and a central "core" of solid wood, a cylinder 6 in. in diameter and 15 in. long. Such a mould will turn out a 6-inch tile with an outside diameter of 8 in. and 12 in. in length. The outer "shells" are bent in half circles, overlapping, and placed at the bottom, within the circle of brads on the plank. At the top they are held in place by an inch board with holes cut 8 in. in diameter and properly spaced, that is, 12 in. apart from centre to centre. The holes in this board fit over the upper ends of the "shells." Within each shell is placed a "core," the bottom end of which, being bored, sits over the central pin on the plank. The core protrudes 3 in. above the mould for ease in handling, and so that it can be twisted occasionally to make the inside of the tile smooth.

THE PROCESS

The mixture is made up of equal parts of fine sand and gravel about the size of wheat kernels, and one-sixth Portland cement. This is mixed in the ordinary way, but not too wet. When the mixture is prepared it is put in the moulds until they are about half full, then "tamped" or pounded well. Then the remainder is added, "tamped" again, and the top levelled off and smoothed. The moulds are allowed to "set" for about 24 hrs., after which they are removed, dried and stored until ready for use.—A. B. C.

The Fertilizers Act

Users of fertilizers are protected against fraud if they care to take advantage of an act passed by the Federal Parliament. Manufacturers are required to guarantee their product and any person that sells, offers or exposes for sale at a higher price than $10 per ton, a fertilizer containing less than eight per cent. available phosphoric acid, or four per cent. of ammonia or its equivalent in nitrogen or nitric acid, or when both phosphoric acid and ammonia are present, at least five per cent. of available phosphoric acid and two per cent. of ammonia or its equivalent in nitrogen or nitric acid shall be liable in each case to a penalty not exceeding $50 for the first offence and $100 for each subsequent offence, and in either case forfeiture of the fertilizer.

A deficiency of one per cent. is not considered as evidence of fraudulent intent. Fertilizers sent to the Inland Revenue Department, Ottawa, will be analyzed on payment of an established fee of $3.00.

Tomato Blight

Prof. W. Lochhead, Guelph, Ont.

The term blight is sometimes popularly applied to a bacterial disease causing the wilting of the stems and the foliage, and for an entirely different disease called the Black Rot of the fruit. The Tomato Black Rot most frequently attacks the fruit and reveals itself as large, black, sunken disease spots. In the real blight, however, it is the foliage that wilts, and at a later stage produces a discoloration of the stems and death results.

With regard to the Rot, it has been prevented by spraying with Bordeaux when the disease first appears, especially if the spraying is repeated at intervals of 10 or 15 days. In the case of the Blight, it is probably transmitted frequently by the potato beetle. If the flea beetles and potato beetles are kept in check there is less liability of the spread of the disease. It is always wise to remove the diseased plants as soon as the wilting shows itself. The crops should be rotated as much as possible.

Fighting Onion Mildew

ONION growers in various sections are seriously troubled with Onion Mildew, and frequently whole patches are destroyed. Several means of combatting the disease have been advised, but in most cases the ravage is not materially checked.

Last year, Mr. W. J. Justice, of Barrie, succeeded in saving a large patch of onions grown from sets. In a recent letter to THE HORTICULTURIST, Mr. Justice wrote: "In fighting the Onion Mildew I used lime and sulphur, dry. A few sprayings with Bordeaux mixture were given, but I don't think it is of any use for the purpose. I had been using lime and sulphur for two or three weeks before I wrote to the Ontario Agricultural College for advice, but was not succeeding as I thought I should. I wrote to the College and asked for a remedy, and found that for once I had guessed right. The onions affected were not seed onions; they were sets.

"A package containing specimens of affected onions were sent the College when I asked for the best treatment for the trouble. Professor Lochhead's reply was as follows:

'Onion Mildew is a destructive parasitic disease. As a rule the bulb is not affected, but if the trouble appears early the bulbs remain very small. After the fungus has secured an entrance into the onions it is difficult to cure. All we can hope to do is prevent it from spreading. In the early stages it can be checked by dusting with powdered quicklime and sulphur—twice as much lime as sulphur. This is best applied with a bellows when the plants are damp. Sulphide of potassium may be used one-quarter ounce to a gallon of water.

"Prevention rather than cure should be aimed at, and this can be assured if the known means are thoroughly carried out. The first appearance of the disease depends on resting spores of the fungus, and they are produced on leaves previously killed by the fungus. Therefore, it is necessary to collect and burn all diseased leaves. If they are allowed to rot on the ground, the resting spores are set free in the soil, and as they retain their vitality for at least two years, there is a constant and certain danger of the disease breaking out afresh. If practicable onions should not be grown on the same land more than once in three years. At the end of that time all resting spores are dead. Damp and shaded situations favor the spread of the summer form of the disease."

Growing the Celery Crop

AT the monthly meetings held by the Toronto vegetable growers during the winter months celery growing in its various phases was fully discussed. Several gardeners belonging to the Toronto branch association have had many years' experience with this crop, and are looked on as authorities.

The celery king of Humber Bay, Mr. Wm. Harris, said that on good celery ground the plants might be set outside about May 24, but much depended on the season. The earlier they were set out the better would be the crop of celery, as greater growth was made during the long days of summer. Later in the season, when the nights became longer, blight is caused if the soil is not well adapted to this crop. On heavier soil the plants should not be set out until June.

Some gardeners recommended setting the plants in rows 2½ feet apart, but Mr. Harris claimed the best celery is obtained when the rows are three or 3½ feet apart. He preferred planting them in double rows with a four-inch space and eight inches apart, because it saved lumber when the plants were being bleached. If the ground is dry more space can be given between the plants so that enough moisture will be furnished. He advised mulching with manure after the plants are six or seven inches high. In the best celery land the less cultivation given the better after the plants have reached that height, as black muck drys out freely when stirred. Besides, cultivation on such soil after the plants are about seven inches high, frequently causes blight. He claimed that this troublesome disease remains in the ground, and said that patches on which refuse from tanneries had been used as a fertilizer produced good celery free from blight. It was thought that the salt in this refuse had something to do with the absence of the trouble. Last year celery planted in double rows was affected more by blight than was that in the single rows.

It was claimed by Mr. Harris that black heart is found only on soil that is not adapted to celery growing. He had found it in his crop in odd places where the soil was not deep. Experience had shown him that celery cannot be grown on shallow soil, and that the deeper the soil the better the crop. Paris Golden Yellow is the variety best suited to his soil, and most sought after on the market. Some growers had said that it had a poor heart, but his experience showed that no other variety filled out as well as does the Paris Golden.

Mr. Courtice said that the supplying of a suitable market until late in the season is as important as the production of an ideal crop. Black swamp soils are suitable for producing celery for the early market, but if celery is wanted to keep late in the season it should be planted on a moderate grade on higher, well-drained soil. This soil must be kept continually cultivated. Celery of better keeping quality can be produced from planting in single rows than by the double row system. It should not be planted too early in the season.

The secret in producing long-keeping quality is to have the crop out as late as possible in the fall. He preferred not to take it in before November 10, and said that every three days it is left out after that time meant three weeks in the keeping quality and also makes it more edible.

The aim of celery growers should be to produce a first-class article. With such it is not hard to hold the trade. Mr. Courtice said he always took his celery to the customers in boxes well lined with paper, and instructed these customers not to leave it loose in the boxes and exposed to the air. If carefully handled and kept away from the air it will keep crisp for a week or longer.

The best keeping celery that he has grown is Evans' Triumph. It has a whole heart and the stocks are crisp. Paris Golden Yellow was much sought after on the market, but it has not as good a heart, and is seldom found free from strings. The length of time that celery can be kept depends on the season. He has kept it as late as March.

It was pointed out by Mr. Joseph Rush that Canadian celery growers have lost the art of keeping that crop. He said that when he first came to Canada he opened a pit on May 17, and sold it as late as June 10. This lot had been stored in a pit with sand in the bottom.

That the market demands a blanched celery, was referred to by Mr. J. McKay. The blanched sorts, he said, do not keep, and the green supply does not sell. If the customers would buy green celery Ontario growers could supply them, and one stick of it would be worth more than half a dozen of the goods now imported from California.

Budding is best performed when there is still sufficient sap beneath the bark to permit of the latter being easily raised with a knife. On the other hand, if the work is done when the tree is still growing vigorously the bud is liable to be "drowned out," or in other words, forced out by reason of too much sap and growth of the stock.—W. T. Macoun, Central Experimental Farm, Ottawa.

The Canadian Horticulturist

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THE EXPORTING OF FRUIT

This year there promises to be another bumper crop of fruit. From all sections, not only of Canada but from the United States as well, come reports that orchards have wintered in exceptionally fine condition and that prospects for a large crop of almost all varieties of fruit are bright. Unless unforeseen events occur there is danger that there may be a glut of at least certain varieties of fruit. This means that those growers who are able to market their fruit in the best condition will receive the top prices, and that inferior fruit may not be wanted at any price, For this reason large quantities may go to waste.

In the past the cooperative fruit growers' associations, where there has been a surplus of fruit, have saved the situation for their members by being able to dispose of their fruit when other growers in the same districts have been unable often to make sales. It is not too late yet for growers, where there are none of these associations, to meet and organize for the joint handling of their crops next fall. This should be done immediately. Only by being able to offer considerable quantities of fruit, properly graded and packed, will they be sure of receiving the best prices.

The increase in the number of cooperative associations of late years has forced another question to the front—the marketing of the fruit in Great Britain. The associations in Ontario, in some cases, have sold their output direct to English buyers, thus saving the middlemen's charges, exacted from growers, who sell to Canadian exporters. It has long been recognized that the consignment of fruit to Great Britain to be sold by auction is thoroughly unsatisfactory. A better system is needed. The Horticulturist has shown that there are many retailers and buyers in Great Britain who would like to establish connections direct with the growers on this side of the ocean. There is a possibility for a great development of this trade. Before it can be made a thorough success two things are necessary: an increase in the number of cooperative associations among the growers of Canada, and some means by which these associations can be placed in touch with the retailers and consumers in Great Britain.

Believing that we are just on the threshold of a vast increase in this work The Canadian Horticulturist has sent a member of its staff to Great Britain, where he will investigate the conditions at first hand, and report his observations through these columns. While abroad our representative, who is now on the ocean, will visit the leading import points, including Glasgow, Manchester, Liverpool, and London, where he will interview leading importers, the officers of retail grocers' associations and other people interested in the handling of Canadian fruit. His main object will be to place himself in touch with firms that are prepared to buy direct from Canadian growers. A list of their wants will be made and the information thus obtained will be made known for the benefit of the readers of The Horticulturist. Any of our subscribers who would like to place themselves in touch with British importers of Canadian fruit, and who believe that our representative while abroad may be able to assist them, are invited to write us immediately. The Horticulturist hopes that it will be able to gather information in Great Britain that will be of great value to Canadian fruit growers.

HORTICULTURAL SOCIETIES

The next two years should show a great increase in the number of horticultural societies in Ontario, and in the value of their work. The new act relating to horticultural societies makes this possible. By this act the two restrictions that have prevented the development of this work have been removed.

After this year it will be impossible for societies to hold exhibitions or to work in connection with agricultural societies. Many societies in Ontario have been doing this, including those at Strathroy, Aylmer, Renfrew, Goderich, and others. These societies have been devoting all their funds to holding exhibitions at the time of their local agricultural exhibitions. In this way they have neglected practically all the other lines of work, which have been carried on so successfully by the other societies in the province. It is not likely that the societies already established at these points will drop out of existence. Instead, they probably will expend their funds in holding separate exhibitions, distributing seeds among school children, civic improvement work, and in other efforts of a more valuable nature.

In other cities, such as Cornwall, where agricultural societies have prevented the formation of horticultural societies, there will be nothing to hinder the establishment of live horticultural societies. This should lead to a considerable increase in the number of these societies. Anticipating the formation of additional societies the total government grant has been increased by almost $1,500. For these reasons a great extension of horticultural work in Ontario may be confidently expected.

The market gardeners around most of the leading cities in Ontario have organized branches of the Ontario Vegetable Growers' Association, and are beginning to make known the fact that their profession is a most difficult one, that requires even more scientific knowledge than any other of an agricultural or horticultural nature. The various steps the growers are taking to develop the industry and to introduce improved methods of culture, are meeting with marked success. There is one point, however, on which not much has been said, but to which attention should be given. There are too many market gardeners who do not pay the attention they should to their personal appearance. They seem to think that no person expects them to dress neatly and to look as well as other business men, and they make this an excuse for a neglect in the matter of their clothes and of their wagons, that results greatly to their own injury. A neat, serviceable suit of clothes and a coat of paint on his wagon would not cost a gardener much in a year, and would help to raise the standing of the profession.

The Toronto Horticultural Society is likely to benefit more than any other society in the province by the new Horticultural Societies Act. In the past the Toronto society, although located in the largest city in the province, has received an annual grant of only $140, although the societies in Ottawa and Hamilton have received grants of $350 each. This has been because a dummy agricultural society in Toronto, that has never held an exhibition, has taken money that otherwise would have gone to the horticultural society. Under the new act the Toronto society will be able to participate in the special grant of $800, made to the four societies in Ottawa, Toronto, Hamilton and London, and also in the general grant to the societies throughout the province. Its grant, thus, will be greatly increased so that it should become one of the strongest and best societies in the province.

The Ontario Vegetable Growers' Association is making a name for itself. It has a membership exceeding 400, which is considerably larger than that of any other association in the province, although its government grant is much the smallest of any of the associations, being only one-third of that of the Ontario Fruit Growers' Association, and less than one-third of the grants to the Dairymen's Associations. Its proposal to offer prizes for the best crops of celery grown in the province and to require the competitors to furnish full information in regard to their methods of growing their crops should create great interest and help to still further strengthen the association.

When giving his evidence before the select standing committee on Agriculture and Colonization, Dairy Commissioner J. A. Ruddick, after announcing that the work of his branch is divided into four divisions (the dairy, fruit, extension of markets and cold storage), had the following to say: "I would suggest, Mr. Chairman, that the matters relating to the Fruit Division be left for the chief of that division, Mr. A. McNeill, to explain to the committee. He is much more familiar with the details than I am, and I think you would prefer to have him give evidence with respect to that particular division." If the chief of the fruit division is better acquainted with the details of the fruit division than is the head of the division, and better able to give evidence before the Committee of Agriculture, why should he not be given full credit for his work and made the fruit commissioner?

Presents for Our Readers

Our readers will be given their choice of the following premiums, **provided that when purchasing from our advertisers they tell them that they were induced to buy goods from them through seeing their advertisement in The Canadian Horticulturist:** 3 months' renewal subscription to The Horticulturist; 1 Cyclamen bulb; 1 Lilium Auratum bulb; 1 Lilium Rubrum bulb; 1 Gloxinia bulb; 1 Asparagus Plumosus Nanus plant; 1 Resurrection plant; 1 new variety Rex Begonia; 1 Pteris Fern; 1 Rubber Plant; 1 Swainsonia plant; 1 Wonder Lemon plant; 1 Boston Ivy; Book on Strawberry Culture; Collection of 6 Tuberous Begonias; Sweet-scented Calla bulb; New Fern, Nephrolepsis Piersoni; Dahlia, "Mrs. Roosevelt, new; Book on Bulbs and Bulbous Plants; Book on Fertilizers; Book on Injurious Insects; Plant Diseases and their Remedies; Book on Onion Culture; Book on Tomato Culture; Book, Your Plants, House and Garden; Collection of 6 Gladioli Bulbs. No premium given to those whose purchase amounts to less than $1.00.

Prince Edward Island Letter

Rev. Father A. E. Burke, Alberton

FOLLOWING closely on the demand made at Ottawa, Inspector Richard Burke, who, unfortunately, has not been retained on the permanent list of fruit inspectors, much as he is needed in that capacity here, will give a series of 12 instruction meetings over the province, four in each county, in the month of June. Mr. Burke was obliged to interrupt this very important work last season, at a time, too, when we needed it worse than ever in our horticultural history. We had gone through a crucial period; great breakdowns were everywhere discernible in our plantations owing to the extraordinary snowfall of the winter of 1905. The people had only started in the orcharding business. A fit of economy struck the department, or some unwise counsel prevailed in the case.

When Dr. James W. Robertson was General Commissioner, knowing P.E.I. better than any other official at Ottawa, and being desirous of helping her in the restricted matters in which she could successfully engage, there was no trouble in getting the assistance required to promote agricultural interests, from dairying to fruit growing. He loved the Island, and knew she could give a good account of herself in the new field. In the Normal School Hall at Ottawa recently, when all the provinces of the Dominion were represented, the Minister said one thing of P.E.I. apples which we were glad to hear. He said P.E.I. apples may be smaller than those of some of the other provinces, but they are the best colored and best flavored in the world. He might have added, too, that they are the longest keeping apples grown—and this not because they are often of the Ben Davis class!

The change which followed Dr. Robertson's relinquishment of government work has not been to our advantage. The whole official horticultural work of Canada has been in some way degraded. It cannot be restored properly to its rightful place and set out on the almost infinite field before it, until its chief has direct appeal to the minister, and until there is a Horticultural Commissioner at Ottawa, as well as a Dairy Commissioner, a Seeds Commissioner and a Live Stock Commissioner.

The meetings which Inspector Burke now undertakes should be of great benefit, not only in repairing and enthusing horticulturally, but in ascertaining the actual state of things, and suggesting the means which must be introduced in order to make this fruitful little province what it easily can be made—an orchard from end to end.

We notice a great deal of erosion of fertile soils this year—a great loss of the fertility of field, which the flood unimpeded carries away to the ocean. The planting of trees in needed localities will greatly help this, and the planting of apple areas at proper distances from evergreen windbreaks will indirectly help this work, as well as directly turn in the dollars so essential to successful husbandry everywhere.

There will be considerable planting out of trees this spring as usual. There is no use in doing so if they are not protected against cattle by proper fencing and fertilized like any other crop. Good money is actually thrown away in buying trees to be stuck out in the open, unfenced, unprotected and uncared. Leave the tree-planting till you are ready for it, and get good and ready at once. There is nothing which will do more to make your life enjoyable in this beautiful place than a plantation of apple trees intelligently tended.

The Winnipeg Market

J. J. Philp, D.F.I., Winnipeg

WHEN one begins to contemplate the wonderful strides that the City of Winnipeg is making, one begins to realize that the reality has the realms of romance practically skinned alive. Probably this is not an elegant phrase, but it is true. Winnipeg at the last census had a population of 40,369. By the estimate of the assessment commissioner (and he is very conservative), there are in this city today not less than 97,000 some hundreds of a population, an increase in five years of almost 150 per cent., or in other words, where there were in 1901 two people here, there are now five.

The bank clearings have reached a point where they are the largest in the Dominion; the taxable property increased last year to the extent of $10,000,000. A year ago it was said that there was a great many more houses being built than was needed; this year up to date the increase is almost double that of last year, and still the patient householder has not received any notice that the burden of rent under which he is laboring, and which is in most cases fully one-third of the average man's salary, is to be reduced.

That the fruit interests have advanced along with the others goes without saying. I have just gathered from the dealers here a count of the number of cars they have severally handled since April 1, and find it reaches the astonishing number of 170 cars of fruit and vegetables, and by vegetables I do not include potatoes and that kind of thing shipped in from provincial points, but pie plant, tomatoes, and new cabbage from the south. About 40 of these cars were bananas, then comes oranges, and all the other varieties of fruit that are in season at this time of the year. One carload of apples cost on arrival here $1,632. There is, also, one car of strawberries in the lot. In commenting on this state of affairs the eastern men can judge for themselves whether or not it is worth their while to try to capture the bulk of this trade, but I wish to draw their attention to one or two points, which are very apparent to me, and in doing so I shall "Nothing extenuate, nor set ought down in malice."

The charge has frequently been made that the Winnipeg people are not willing to pay a fair price for a good article. This is manifestly unfair, and can easily be proven to be incorrect, but one must discriminate. There is a vast difference between a disposition to pay a fair price for a first-rate article, and a refusal to be held up for a big price for something that is worth perhaps but little more than the freight.

In writing these letters it is to be distinctly understood that I am voicing nobody's sentiments but my own, and I am writing ex-officio at that. The press reports an extraordinary good show for peaches at Leamington. If this is correct, now is the time to perfect the plans to get them to this market, and not wait till the week they are to be shipped.

This is a ticklish subject to touch, but without wishing to give offence, one cannot but deprecate the sad want of self-reliance that is apparent in the actions of the fruit growers. They have the Railway Commission at their disposal to help them lick the transportation companies into line, and that is a great advantage compared with the conditions that used to obtain in years past.

The prospects for a great and successful business the present season are better than ever before, but it is only by being prepared and ready to take advantage of the opportunities that one can get their share of the benefits.

If by writing these letters or answering any private communications I can help any one to share in the general prosperity, I shall be only too glad to do all I can.

Montreal Fruit Trade Letter

E. H. Wartman, D.F.I.

Several steamers have left this port for England, but I have heard of no apples going forward on any of them. Usually a few consignments are sent on the first steamers out in May The reason for none going this year is that number one Spies are worth $7 a barrel here with no risk to run.

The only new fruit coming in is strawberries. Those from North Carolina are in good condition. The boxes contain full imperial quarts, 32 to the crate. Although they are selling cheap for so early, 11 to 13 cts., the demand is not keen The weather early in May was too cool.

If berries can be landed in Montreal from Florida and North Carolina in perfect condition, what about our early apples that ripen in July and August, and arrive on our markets in rotten condition? If they were packed in cool storage buildings, instead of outdoors and in heated buildings, and shipped in well-iced cars, they, also, would arrive in good condition. If our numerous apple houses, which are generally close to lakes and rivers, had ice houses to hold a sufficient quantity, not only to cool the packing rooms, but to ice the cars when ready to load, this would help to remedy matters. There could be tanks at proper distances apart in these packing houses to hold about one ton of ice each. If this were done and the building closed, in a few hours the temperature would be low enough to commence work. There would be plenty of men glad to take a contract to put in ice to fill these houses at 25 to 35 cts. per ton. If apples are put up at a temperature of 70 to 80 degrees and never cooled, what could we expect but disaster? When fruit can be cooled so cheaply it never pays to run any risk. Sometimes even in the middle of October a few hot days come. Hot weather at this time frequently does untold harm and results in heavy loss to the fruit shippers.

Our Nova Scotia Letter

G. H. Vroom, D.F.I.

The spring in N.S. has been cold and wet. The rains have been frequent and heavy. North and east winds have helped to retard the work of cultivation and cause vegetation to come along slowly. The past week has been better and the fruit trees are showing considerable life. On some early varieties of apples the bloom is beginning to show.

All kinds of fruit will bloom full, and the prospect for an average crop is exceedingly good Spraying is being carried on extensively, particularly in the counties of Kings and Hants. The power-spraying outfit is doing good work in Falmouth and giving general satisfaction. The tent caterpillar is very troublesome in this locality as well as the other pests orchardists have to contend with, and the fruit growers are awake and will profit by the demonstrations given this season with the power outfit.

Shipping Green Melons

W. A. Emory, Aldershot

The foolish practice of growers shipping green melons is hurting the melon trade more than anything else. Green melons are fit for nothing else than feeding to hogs. A consumer who buys a green melon never wants another.

We had a good trade in melons in Montreal, but lost it because growers insisted on shipping green melons. We cannot get nearly as high prices as we used to. The fruit inspectors do not seem to know anything about melons or they would stop this practice.

Practical Pointers from Practical Persons

Picked up and Penned by A. B. Cutting, B.S.A., Special Correspondent of The Horticulturist, who is visiting the homes of fruit growers in the Niagara District

THE work of the Dominion fruit inspectors in conjunction with the Fruit Division at Ottawa is highly commended by every progressive person connected with the fruit industry. Our country is so large, and the business of fruit growing is so extensive, it is gratifying to contemplate the amount of good work done in the comparatively short time since the Canadian Fruit Marks Act became law. Although past and present results give us reason to appreciate what has already been done, there is room for more inspectors and for more work in this direction throughout all parts of the Dominion. Among the districts that feel the need of more rigid inspection, particularly in the matter of tender fruits, is the Niagara peninsula. Among dealers and shippers, and all honest growers, there is a general desire for the appointment of a special inspector for that district during the tender fruit season. Such an appointment would not only insure more uniform and honest packing, correct style and size of packages, etc., but it also would be a material boon to the growers themselves. Such a system of rigid inspection would make it easier for the buyer to pay the producer more money for his fruit; for the buyer could then buy almost on a guarantee basis.

WANTED: AN INSPECTOR OF TENDER FRUITS

Mr. E. L. Jennett, of Beamsville, expressed himself on this matter somewhat as follows: "The growers in this district who sell to the dealer are not so particular in the matter of packing as they were when selling on commission. From Jordan west, most of the fruit is sold at the point of shipment, and the principal ambition of the grower seems to be to get it on the hands of the dealer. Under this arrangement, the grower does not seem to care whether the fruit is honestly put up or not. He knows that the dealer hasn't time to inspect every basket of peaches or grapes that he buys on rush days. Then, when the fruit is shipped and turns out wrong, there is no way to trace the original packer or grower. The growers cannot bring their fruit to the shipping house until the last minute, then it has to be rushed off. We have fruit inspectors now, but they cannot be everywhere at once. Yet, what is the good of having inspectors at all if the dealer himself has to do the inspecting? We need a permanent inspector for this district, and one man could cover the whole Niagara peninsula. The inspection should be done at the point of shipment, not at the other end. The dealers themselves would gladly put the inspector wise to any suspicious cases. And the grower would soon see that dishonest methods in packing and packages do not pay. If the growers knew that at any day or hour the inspector is apt to be on the shipping platform there would soon be a marked improvement in these things. The dealers themselves could afford to increase the buying price if they could buy with a feeling of security."

"We need a regular inspector for the Niagara district," said Mr. S. M. Culp, Beamsville, "because it is impossible for dealers to inspect fruit during the rush season. Last season I bought a carload of strawberries and shipped them to the Maritime provinces. They turned out to be mostly trash. They came in to me in a hurry and I had not time to inspect them. I depended on the honesty of the growers and, of course, got all the blame from the consignees in the east. The appointment of a special inspector for this district would do away with cases of this kind. Under existing conditions fraudulent packers get as much money for their fruit as honest ones. The lack of a permanent inspector down here puts a premium on fraud. We need an inspector, and also, I believe, we should have legislation to compel growers to use a number, or their name, on all open packages—the number, if such is used, to be designated by the buyer. By the use of such numbers dishonestly packed packages could be traced to the man who originally put them up."

STRAWBERRIES

In the Burlington district the strawberry prospects are not very promising. Many plantations have been more or less injured by the exceptional conditions of the past winter. Generally speaking, those patches that were covered with some protective material, such as straw or coarse manure, have come through in good shape; while 60 per cent. of those uncovered are injured. Among varieties, the Williams seems to have suffered most, as it is not as hardy as some others.

Many illustrations of the value of mulching for winter protection are to be found in the locality. "I mulched all my patch but a small corner," said Mr. J. A. Lindley, Burlington, "and the result is that those mulched came through in good condition; the unmulched corner is badly killed and going back every day, and probably will do so until picking time."

A few general pointers on strawberries were given the writer by Mr. Wm. F. W. Fisher, one of the best informed strawberry men in the district. He emphasizes the importance, when harvesting, of keeping the rows picked clean, and also of keeping the picked fruit in the shade as far as possible. He said also that it is best never to put more than one variety in the same crate. Two or more kinds in a crate hurt the appearance of the package when placed on the market. For the sake of appearance, also, the top layer of berries may be placed with the hulls or calyx end down, but in a rush this cannot always be done; still, when it is done and done honestly—not "topping off" with large berries—the basket will often bring two cents more than those in which the berries are thrown in a haphazard fashion.

The writer has observed, and Mr. Fisher agrees with him, that those varieties of strawberries that are the most acid or tart in flavor are usually the best shippers and longest keepers. For example, Williams, Lovett, and Leader possess a degree of acidity beyond most others, and it is well known that they are among the best, if not the best, for shipping purposes. Others again, particularly early varieties, like Michel's, that are sweet, but not acid, seldom are good keepers and shippers. We call attention to this point as it may be of value, one way or another, in the selection of shipping varieties and in the manner of marketing varieties already on hand.

CULTIVATING LOW-HEADED TREES

The advantages of maintaining low-headed trees in a peach orchard have already been mentioned many times in the columns of THE HORTICULTURIST, yet there are many growers who object to this practice on the ground of extra labor at the time of cultivating. Mr. Willis T. Mann, Barker, N.Y., in the course of an address in the Niagara district this spring, pointed out a simple method of overcoming this difficulty. His plan in low-headed orchards is to plow in spring as close to the trees as possible, and then use an ordinary low spring tooth harrow to level this down and to loosen up the soil near the trees that cannot be reached with the plow. A harrow must be used that has two sections, and these sections should be extended or separated by means of a wide "evener" or "spreader" fastened between them. The width of the spreader will depend upon the distance between the plowed area and the trunks of the trees. On very light soils a smoothing harrow may be used instead, if adjusted in a similar manner.

QUINCE TREES REQUIRE ATTENTION

Success with quinces is not so general as with most other fruits. Some of the best to be found in our markets are grown by Mr. C. C. Pettit, Fruitland. These are from trees planted on a black clay loam incumbent upon a heavy clay subsoil. The trees are well cultivated, sprayed and pruned. The pruning consists of regularly thinning out the branches with sufficient heading back to correct growth. The two leading varieties are grown, viz., Orange and Champion. The former is the larger, but it is more apt to crack and break open than Champion.

THE PEAR PSYLLA.

"The pear psylla is as bad a pest on pears, particularly on Bartlett's, as the San Jose Scale is on peaches. It is very difficult to combat. Growers should be on the watch for it as it is becoming more prevalent every year," said Mr. Jos. Tweddle, of Fruitland. He recommends for treatment the lime and sulphur wash, applied thoroughly in early spring. For best results the trees should be sprayed four times, going east and west and spraying both sides; then north and south both sides.

GOVERNMENT INSPECTION

Mr. W. E. Biggar, San Jose Scale inspector for township of Saltfleet, Ontario, told the writer that he finds his territory almost free from scale as compared with the situation three or four years ago. The growers have learned that the scale can be controlled by the lime and sulphur wash, and are taking advantage of that fact. Orchards known to be infected are watched and neighboring orchards are protected. "I know of a particular orchard," said Mr. Biggar, "an orchard of 100 acres that three years ago was badly infected in parts with scale. The owner being determined to stamp it out, used the lime and sulphur wash with persistence and thoroughness, and now you would need more than an ordinary microscope to find a live scale in the orchard." Mr. Biggar said also that black knot was practically wiped out of the township, but fears the spread of "little peach," a new disease in this country, which has recently made its appearance, and which is akin in character to peach rosette.

SPRAYING MIXTURE

Mr. Thos Beattie, San Jose Scale inspector for city of St. Catharines, has used all mixtures yet recommended and finds Carlson's mixture to be more practical and more satisfactory than any other. "It is the only treatment for scale that I can honestly recommend. It is the easiest and cleanest to apply, the easiest on harness and machine, and it is the cheapest in the long run. I can cover as many trees with one barrel of Carlson's as with three barrels of lime and sulphur. It is the best for city lots as it does not destroy paint nor discolor buildings like lime and sulphur." In St. Catharines the scale is very prevalent in all grounds where no treatment has been applied. I have found it on all kinds of fruit trees except apricot and sour cherries. Also on mountain ash, on Japan quince, on thorns of all kinds, on privet and very bad on lilacs."

SPRAY AT THE RIGHT TIME.

"Spraying pays," said Mr. Gabriel Overholt, of Jordan, "but one spraying at the right time is worth half a dozen at the wrong time." This

view is held also by Mr. G. C. Caston, of Craighurst, who contends that should growers find time for only one spraying in a season, that one should be with copper sulphate, three pounds in 40 gallons of water, and done early in spring when trees are dormant.

Prizes for Celery Growers

At a meeting of the Executive Committee of the Ont. Vegetable Growers' Assn., held in Toronto May 22, it was decided to recommend to the branch associations throughout the province that prizes be offered this year for the best crops of celery; judges to be sent around to inspect the different crops. As submitted to the branch associations for their approval, it is proposed that the competition shall be conducted as follows: That there shall be two classes, one for growers with 1,000 to 10,000 plants, and one for growers with 10,000 plants or over, competitors to enter their whole crop. Five prizes will be offered in each class of $25, $20, $15, $10, and $5 each.

Competitors must be members of the assn., and must send their entries to the secretary of the provincial assn. by July 10, accompanied by an entry fee of $1. Judging will start Aug. 1, and will be completed by Aug. 15. The committee reserves the right to make such alterations in the regulations governing the competition as later may seem desirable. Should either class have less than six entries, the committee reserves the right to cancel any or all the prizes in such class. Each competitor will be required to furnish full information in regard to his method of growing his crop and the completeness and value of the information thus furnished will be taken into consideration by the judges in awarding the prizes, and later will be published in the annual report of the assn.

The sec.-treas. was authorized to watch the bulletins issued by the various U.S. expt. stations and to purchase extra copies for the members of the assn. when same are likely to be of value and can be bought at reasonable prices.

It was decided to correspond with the Ont. Fruit Growers' Assn. favoring joint action in approaching the Dominion Minister of Agri. to request that the next census figures shall be so arranged as to separate the figures showing the total production of vegetables and fruit which hitherto, in some important sections, have been lumped together.

Ottawa Horticultural Society

Some new features will be introduced by the Ottawa Horticultural Soc. this year. The exhibitions of flowers instead of lasting only one evening, will be continued until 5 o'clock the following day, so that more people may see them. Exhibitors who remove their exhibits before the close of the show forfeit their prizes.

The inaugural exhibition was held last week and was a great success. At each exhibition three prizes of $8, $5 and $2 are offered for the best displays of cut flowers arranged for effect in a space 20 sq. ft. in size. This is one of the features of the exhibitions. Lady Grey has announced that she will continue the garden competitions that were introduced and conducted by Lady Minto. The work among the school children of the city, that has been conducted for several years by Mayor Ellis and Mr. R. B. Whyte, will be continued this year. Interesting addresses are given at each of the monthly meetings.

Russet apples should be packed in a close box because they evaporate and become wrinkled so quickly. A close box tends to prevent this evaporation.—A. McNeill, Chief of Fruit Division, Ottawa.

THE HORTICULTURIST is going ahead of all others in the matters of horticulture.—Nelson Caron, Prairie de Loup, Que.

A Large Crop of Fruit Probable

THE following reports on fruit crop conditions in N.S., Que., and Ont. were received too late for publication in our last issue, but are still of interest. They show prospects for a large crop of fruit in all three provinces are bright.

NOVA SCOTIA

Trees have wintered all right. I do not see any winter killing; no loss from mice, no breaking with snow. We ought to have a good crop of apples, but it is June that tells the tale. Orchard setting is up to former years. Many farmers are increasing their settings, and commercial orchards as a business proposition are becoming more common. Better care is being taken, clean cultivation and cover crops in midsummer becoming the rule rather than the exception. Spraying for fungii and insects will be practised this year in tenfold ratio, as last year's experience was an eye-opener to many: 100 pumps have been sold for use in this section—R. S. Eaton, Berwick, N.S.

Fruit trees wintered splendidly; even peaches. Every variety of fruit looks well. Quie a few persons have planted 1,000 apple trees each. This has become so common a piece of work that it creates no remarks. Large numbers are planting 200 to 500. Plum, peach and apple were light last year, and we expect a good showing, possibly 800,000 bbls. We should have this if a good year.—R. S. Eaton, Kentville.

QUEBEC.

Fruit trees are in good condition. Many of our orchardists are increasing their acreage year by year, and the present season is no exception. Fameuse and McIntosh Red are the favorite varieties. An unusual amount of dead wood was pruned from old orchards this year, likely due to the excessive cold winter of 1903-4. The past winter has been an unusually open one for this province, and vegetation has suffered more or less. Grass in many sections is injured, also shrubbery, such as rose bushes, raspberries and blackberry canes and strawberry plants, where not properly covered.—J. M. Fisk, Abbotsford.

ONTARIO

Prospects for all kinds of fruit in the Lake Huron district are very good. Trees and plants came through the winter in first-class condition. Very little planting is being done, only a few trees here and there filling in vacant places. The Bruce Fruit Growers' Assn. is making arrangements to put up an evaporator in connection with their packing house.—A. E. Sherrington, Walkerton.

There has been a great appearance of bloom, with buds very full and strong. Even the peach trees wintered well. There was very little planting done. People seem to have got completely discouraged with condition of affairs during last few years. However, I think this will soon change, as I notice more interest being taken in the orchards this spring in the way of pruning, spraying, etc., than for many years. The Georgian Bay Fruit Growers, Ltd., are again to the front with highest prices in British market for apples. March shipments averaged on all grades $4.55 net at Thornbury.—J. G. Mitchell, Clarksburg.

Fruit prospects were never better in the apple line. Pears seem to have suffered some. Peaches are almost a failure. Plums, also, especially the Japanese have suffered. Our section is mainly an apple and pear one, so that we do not feel the loss of plums and peaches very seriously. There may, however, still be a fair crop of these. Apples seem to be in very good condition. We have been busy with two power outfits spraying, and hope for a bumper crop.—W. D. A. Ross, Chatham.

Fruit Preservatives

Frank T. Shutt, M.A., Chemist, C.E.F., Ottawa

For a number of years past experiments have been carried on to ascertain the most satisfactory fluids for the preservation of fruits for exhibition purposes—fluids which not only would be antiseptic, but also, as far as possible, would keep the fruit with its natural size and color. For the information of those who may have occasion to exhibit fruit several months after it is picked, the results of these trials, with recommendations, have been published from time to time as the work progressed. In the course of investigation the merits of more than 50 solutions with various kinds of fruit have been tested. That the problem is a difficult one will be apparent from the fact that more than 75% of these fluids have been found more or less unsatisfactory.

The experience gained from trials made during the season of 1905 enables us to offer the following recommendations, the final examination of the fruit being made on April 1, 1906. Much credit for the success in this work must be accorded Mr. W. H. Charlton, of the chemical staff, who has had this investigation under his charge.

STRAWBERRIES

The most satisfactory fluid for this fruit is formalin, 2%; hydrogen peroxide, 2%; alcohol, 10%. It has been under trial for two years, and berries kept in it for this period have retained, in a very large measure, their natural appearance.

RED CURRANTS

A fluid of zinc chloride 3% and alcohol 10% has given excellent results, and can be strongly recommended.

GOOSEBERRIES

Copper sulphate 1% and alcohol 10% can be spoken of in the highest terms. Fruit of last season has retained its natural form and color practically unimpaired. There was no splitting of the fruit or apparent shrinkage.

RASPBERRIES, RED AND PURPLE

This is a difficult fruit to preserve without the fluid becoming so dark that the berries can scarcely be seen. By an occasional change of fluid, alum 5% gives fairly good results. It is the best of the many solutions experimented with.

PEAS AND BEANS

Zinc chloride 3% and alcohol 10% has proved very good for preserving peas in the pod. The samples retained their natural color and appearance. For green beans in the pod a solution of sodium sulphide 4% has been found excellent, and can be recommended.

When possible distilled water should be used in making up these fluids. Having determined the quantity of fluid required, the amount of the various chemicals to use may be readily ascertained by remembering that one gal. is practically 160 ozs. Ten %, therefore, means 16 oz., 5%, eight oz. to the gallon, and so on.

We are Booming in Canada.—I must congratulate you on the great improvement in THE CANADIAN HORTICULTURIST. You are doing good work at Toronto. THE HORTICULTURIST is one of the very best papers of many horticultural journals we have on file here. I read with great interest the report of the recent meeting of the Ontario Fruit Growers' Association. Horticultural affairs certainly are booming in Canada.—(Prof. W. N. Hutt, Agricultural Experiment Station, Maryland, U.S.A.

Condition of Vegetable Crops in Ontario

THE following reports have been received from the crop correspondents in Ontario of the Ontario Vegetable Growers Association:

TORONTO

Humber Bay.—Although the season was very late, the ground has worked up well, and the vegetable growers have got a move on, and it is wonderful to see how well the crops are looking and how forward they are. Asparagus cutting is in progress, rather light crop as yet. Rhubarb is rather late this season, and has held its price well. There will not be more than half the quantity there was last year from this district on account of the large amount lifted last fall for winter forcing. Pull light and keep the price up to 20c. per doz. Peas are up and looking well, but in small lots. Large lots of early cabbage are planted and doing well. Early beets, to all appearance, are growing fine, and will be a large crop. Dutch sets are doing well, being planted in large quantities. Some very early ones were ready for market by May 24. Spring spinach is well forward and if the weather continues warm will be ready by June 1. Big supplies of lettuce and radishes from greenhouses and hotbeds are still on the market. Outside radishes will be ready for pulling the last week of May. There are large quantities of early celery planted.—J. W. Rush.

Bracondale.—Crops are not looking as well as usual, owing to the dry, cold weather. The transplanted beets, of which there are a greater number than formerly, are looking well, as are also the transplanted lettuce, but the seed beets and carrots are very poor. Spring spinach is doing very well; growers started to cut May 17, the price being $1 per bush. Outside radishes are very good, growers are pulling them at 30c. to 40c. per doz. We are long on rhubarb at any old price. Asparagus has suffered through the cold weather. There are a number of new beds being planted. The onion sets will be ready for marketing by the end of this week; they are doing very nicely.—A. W. Shuter.

BURLINGTON

Asparagus and rhubarb have not been as abundant as last season, the weather having been too cool and damp, but prices have been good. Asparagus up to date has averaged $1 per doz., and rhubarb 35c. per doz. About the same acreage of early potatoes as usual has been planted, and they are coming along nicely. More unions than usual will be grown; they are doing nicely. Cabbage is growing rapidly, but not a great deal has been put out. Cauliflower will be about the same as usual. All of the vegetables grown under glass for outside planting are in advance of last season, but owing to the weather very little has been planted out as yet. Tomatoes, both early and late, will be extensively planted. Commercial fertilizers are being freely used by most of the gardeners.—J. A. Lindley.

SCOTLAND

There will be about the same acreage of vegetables as last year. About 150 acres of onions have been planted. The plants have come up nicely and the growers have started through them with the weed hoes. Some cucumbers are being grown for pickles.

CHATHAM

The season is very backward and a good many seeds that were sown a month ago have not yet made their appearance above ground. Tomato planting is being delayed. Some that were planted were frozen, but the bulk of the crop is not yet planted in the field. There has been a plentiful supply of lettuce, the demand for which has been increasing very rapidly of late years. Ten years ago very little lettuce was sold, and most of it was imported from Detroit. Now, hundreds of pounds are sold weekly, and nearly all home grown. Radishes (outdoor) have just made their appearance, but are very small in size and quantity. Onions are looking well, but are making very slow growth. Asparagus is plentiful, and a very good size. Strawberries are looking very promising; some of the early blossoms were frozen, but the later ones are only just appearing. Potato planting is progressing; some early ones are making their appearance. Market prices are as follows: Lettuce, wholesale, 15c. per lb.; retail, 20c. per lb.; bunch of 18 radishes, 50c. per doz. wholesale, 5c. bunch retail; potatoes $1 per bag; bunch, 8 in. circumference, asparagus, 50c. per doz. wholesale; 6c. bunch retail.—Fred Collins.

NAPANEE

There will be a marked increase in the acreage of potatoes, tomatoes and unions, owing to the high prices. Potatoes are worth $1 to $1.25 per bag, 90 lbs., according to quality. Onions are very scarce, and are worth for good sample $1 per bush. There is a very large acreage of tomatoes, mostly contracted to Napanee Canning Co. at 25c. per bush. of 60 lbs. Other vegetables are about the same as other seasons. No new growers—at least, I could not find any—E. M. Sherman.

KINGSTON

Vegetation in almost every line is 2 to 3 weeks behind last season's condition at this date. On the night of May 20 we had a severe frost. Early potatoes, beans, etc., just showing above ground perished. Tomatoes have not been taken from the beds, and from present appearances will not be for some time. Cabbages already out are making no progress, except in very favorable locations where soil is a good depth and the rays of the sun reach them directly. Small seeds, such as onions, carrots and parsnips are in some instances above ground and waiting an opportunity to go further. A heavy rain fell May 13 that formed a crust on soils of a cloggy nature. The Egyptian, or perennial, onion seems to make satisfactory progress, and can be marketed. Lettuce taken from the beds and placed in favored spots is making no progress. In quoting prices by quantity on Kingston market, potatoes sell at 90c. to $1 per bag; onions, last year's growth, 20c. to 25c. per peck; exceptionally good ones may reach 40c. per peck. Green onions are sold only in bunch, and are offered at 40c. to 50c. per doz. bchs. Lettuce and rhubarb are offered in same form and sell at a similar price. No increase in area for vegetables is noticeable, though a better system of cultivation, aided by more favorable conditions of weather, will probably lead to an increased yield compared with previous seasons.—Chas. F. Adair.

PRINCE EDWARD COUNTY

The acreage of beans, turnips and tomatoes will be larger this year than last. Corn, peas and berries will be less than last year. As this county is surrounded by water it makes all vegetables late. We had frost May 20.—Stephen Lake, West Lake.

Doncaster.—There will be very little change in the crops grown this season. There will probably be rather more celery grown than last year. Some of the gardeners are dropping seed onions altogether, so that the acreage of onions will be rather less than last year, but it will not be a great decrease.

Early potatoes, cabbage, cauliflower and other common crops will be grown in about the usual quantity. The season is rather backward for early vegetables. While bunched onions and rhubarb are very plentiful, asparagus, radishes and spinach are coming in in very limited quantities, most of the fall spinach having been killed out during the winter.—C. Gibbard.

NIAGARA FALLS SOUTH

Planting of early sweet corn, squash, beans, cucumbers, melons about completed. Several risky ones setting out early tomatoes, peppers and egg plants. Cold winds and weather of the fore part of May retarded the growth of early garden stuff, slight injury being inflicted by 3 or 4 white frosts week of May 20. Tomatoes, corn, beans and beets are being contracted for canning factories at last year's prices. Although there is a new factory starting at St. David's there will be a considerable decrease in acreage planted under contract. A great scarcity of late tomato plants prevails which will further decrease the acreage generally planted. Labor is more plentiful than for two seasons past.—Thos. R. Stokes.

LEAMINGTON

Early cabbage is growing nicely and should be on the market some time during the last of June. The cold season has had its effect in holding back the crop which usually is ready for market about June 15. Wax beans and sweet corn are growing very well. Tomatoes are being planted in the fields and are looking well. The outlook is for a decided increase in the shipments from this part of the Province if the growing season is satisfactory. Several new growers are in the field this year with several thousand more plants, and this means a considerable increase. Some who grew them last season are out of it, not having received enough for their crops to pay for their plants. Considerable lettuce has been shipped, the price being 12½c. to 15c. per lb.—E. E. Adams.

Items of Interest

The Distributors' Co., Ltd., fruit and produce dealers, of Colborne St., Toronto, have assigned, paying only 68 cts. on the dollar. This company had been in operation for a little over a year.

At Hamilton recently, Magistrate Jeffs fined a farmer named Morrow $5 for offering short weight potatoes on the market. Nine bags were confiscated. The total loss to the farmer amounted to about $15.

The fruit growers of Norfolk county have formed an association for cooperation in packing and selling fruit and to encourage the spraying, fertilizing and cultivation of their plantations. The following officers were appointed: Pres., Jas. Symington; vice-pres., W. F. Olds; exec. com., J. E. Johnson, J. Gilbertson, Robt. Waddle, W. F. Olds, Jas. Symington; manager and sec.-treas., Jas. E. Johnson. Norfolk county growers produce fruit of good quality, and it is expected that with proper care in growing and packing they will be rewarded by an increased demand and higher prices.

In order that the members of The Toronto Horticultural Society may become better acquainted with their president, a hearty invitation has been extended to them to spend the evening of June 27, from 7 to 10 o'clock, at his home, corner of Danforth and Pape Avenues. The members will see, also, what Pres. H. R. Frankland knows about horticulture.

In the trade and commerce report of May 7, Commercial Agent Sontum, of Christiana, Norway, states that the Pomological Assn. of Sweden was arranging to get a free distribution office, which would serve as a medium between the producer and the consumer. In preparing for this move an endeavor is being made to bring the seller and the buyer in direct touch with each other in a practical way. Last summer circulars were sent to the members and large fruit growers enquiring how much fruit each had to sell and the price expected. Blank sheets were filled out and returned to the assn., and the sellers awaited orders direct from the buyers. Much fruit was disposed of in this way to the satisfaction of both. Recently a fruit office has been started and fruit is received for direct sale or for storage, being sold on a commission basis. Strict attention will be paid to foreign markets. All fruit is sold by weight.

Encouraging Results

An example of what can be done in a small village having only a widely scattered population, is shown by the work of the Cayuga Horticultural Society. The members have endeavored by public gardens in the Court House Park and at the high and public schools to educate the public and induce them to work on individual lines. In this way they are paving the way for flower shows and garden and lawn competitions.

"By our efforts," writes Secretary Goodman, "a Sunday walk has been established in the summer, by means of which the citizens make a point of enjoying the floral effects in the different parks and grounds, the good result of which has been very apparent on the healthier tone of the town.

"We now purpose to spend all our money for a time on premiums to the members. The work in connection with the public gardens, so propitiously commenced, will not languish. In this way we hope to foster a greater pride in the floral adornment of the individual home, and interest those who, so far, have not assisted in our work."

A Live Horticultural Society

Although comparative disappointment attended the St. Catharines Horticultural Society for a few years, the results of the last two or three seasons have shown that the plans adopted by that society are worthy of emulation. This society has been in existence for six years. During the first three its membership was stationary—being 39.58 and 63 respectively. In 1903 it went down to 51, just barely sufficient to keep the organization intact and be recognized as a society. At each annual meeting it would be considered desirable to hold an exhibition in June, and a committee would usually be appointed, but that would probably be the last heard of it.

During these years, however, if the society had barely maintained an existence, it did not squander its resources, but carefully husbanded them. In 1904 there was a balance in the treasury of $125 or more—sufficient to warrant an aggressive movement.

The new board of directors met practically every two weeks during the spring, and some had arrangements under way for two exhibitions—one in June and one in September. Aster seed was distributed among the school children, and a lively interest awakened among the younger people. The city council gave a grant of $50, and business men generously contributed toward the prize list in the way of special prizes. When it was seen that the society was working, it was not difficult to increase the membership, and the year closed with a total of 98 names on the list and $65 in the treasury, with all bills paid. Being the first year in which flower shows were held in the city, the directors were more concerned in making them an unquestioned success, because of the influence on the efforts of future years, than in maintaining the cash balance with which the year was commenced.

Last year, 1905, we resolved to have three exhibitions, in June, July and September. The first was principally for roses and other early flowers and fruits; the second for sweet peas, pansies, nasturtiums, and other midsummer flowers and fruits; the September show for asters, dahlias and other fall flowers; while the fruit exhibition was looked on as being the principal one of the year. At this show vegetables also were given a place. All our exhibitions this year, as well as last, were successful. An unusually warm night in September, and the counter attraction of a military parade in close proximity to the show, marred the attendance at the last exhibition, but yet our receipts held up well.

The value of the awards offered at the June exhibition was $73.50; in July, $78.90, and September, $87.80, making a total of $240.20. The entries for June numbered 155, for July 312 and for September, 412.—W B. Burgoyne, president.

Seaforth's Loss

The Seaforth soc. recently sustained a great loss when its esteemed secretary, Mr. Wm. Elliott, owing to advanced age retired from his position as town clerk and removed from Seaforth to Owen Sound, that he might live with many of his family relations. Mr. Elliott was one of the first to take hold of the Seaforth soc., and has been its efficient sec., with the exception of the first year, since its beginning up to this year. A large measure of the credit due the soc. for the excellent work it has accomplished may be given to Mr. Elliott for his untiring efforts in its behalf. The soc. is recognized as a power for good in the town.

Wm. Elliott

Horticulture in the West

Horticultural interests in the Canadian prairie country are well represented in the report of the sixth, seventh and eighth annual meetings of the Western Horticultural Society. Important questions of vital interest to all horticulturists discussed by successful and practical men in various lines are fully dealt with. Matters of interest to lovers of trees, fruits, shrubs, flowers, vegetables, and bees fill 108 pages.

Some idea of the scope and nature of the contents may be gleaned from the following list of papers and addresses, by such prominent horticulturists:—Fruits for Eastern Manitoba, by Alex. McPherson; Apple Growing in the Red River Valley, by A. P. Stevenson; Growing Fruit for Market, by W. C. Hall; Hardy Perennial Flowers, by Robert Lloyd; Half-hardy Ornamental and Flowering Shrubs, by Harry Brown; Tree Planting for Fuel, by Rev. J. Fotheringham; Horticulture in Northern Alberta, by Donald Ross; The Ideal Farmer's Garden, by S. A. Bedford; Hardy Fruits for Western Manitoba, by S. A. Bedford; Small Fruit Culture, by Prof. C. B. Waldron; Small Fruits in Saskatchewan, by P. G. Laurie; The Relation of Birds to Horticulture, by George E. Atkinson; Suggestions for the Improvement of our Horticultural Products by Cross-fertilization or Hybridization, by Harry Brown; Small Fruits in Manitoba, by D. W. Buchanan; Ornamental Trees and Shrubs, by A. P. Stevenson; Apples and Plums in Western Canada, by H. L. Patmore; Apple Growing in Manitoba, by John Caldwell; Onion Culture, by Victor Mager; The Improvement of our Native Fruits, by Max D. Major; Hardy Annuals, by Robert Lloyd; Some Branches of Horticulture that are Necessary and Profitable to Western Settlers, by H. L. Patmore; The Progress of Apple Culture at the Brandon Experimental Farm, by Harry Brown; Roses and How to Grow Them, by Robert Barclay; The Peony, the Flower for Manitoba, by C. S. Harrison; The Evolution of Horticulture, by P. Middleton; Apples and other Fruits Hardy in Manitoba, by A. P. Stevenson.

This report is prepared for free distribution to the members of the society. It has also been decided by the Executive that as long as the supply lasts copies of previous reports will be sent to new members coming in for membership during the year 1906. There are three of these past reports still held in sufficient numbers as to allow of continued distribution. The cost of preparing and mailing this latest report amounts to about 30 cents a copy, and this, together with the other three reports, makes up a parcel of literature that is not only worth more than the price of membership to the one who receives it, but has actually cost the Society almost one dollar to produce. Anyone, no matter where he resides, may become a member. The address of the secretary is George Batho, P.O. Box 1310, Winnipeg.

How to Grow Tomatoes

The most approved method of growing tomatoes was discussed by Mr. L. M. Schenk, of St. Catharines, at a meeting of tomato growers at Jordan Station recently. Mr. Schenk first described the making and care of hotbeds. For such plenty of manure should be used and covered, when prepared and tramped, with five inches of good soil. The bed should be started about March 20, and the seed sown a week later. The seeds should be patted into the soil and, unless the soil is very dry, left without water until they are up. The temperature should be about 60 degrees at night. When plants are up, air often to prevent damping off.

Mr. Schenk advised transplanting to a second hotbed with less manure and more soil, instead of to a cold frame, as is the usual custom. By this means, he said, there is less damage of loss, and stronger plants are secured for the field. This transplanting should be done late in the afternoon to lessen danger of wilting. Next morning lift glass and allow sun and air to dry up moisture; when the plants show signs of wilting, shade again. Plants must be stocky for field culture, not long and spindly. This is secured by giving them plenty of room and plenty of sun and air in this hotbed.

From hotbed number 2 transplant directly to the field. Have plot marked off into squares, four feet each way. Manure all the ground—not the hills only. The latter system gives a good start, but is not lasting in results. In addition, a little hen manure, or phosphate, thrown in with each plant is valuable. The night before transplanting soak the soil in the hotbed with water, and again add a little water next morning. When the grower has the time it is wise to retain a ball of earth about the roots. For quick work plant with spade rather than by plowing furrows.

Mr. Shenck did not wish to recommend any particular variety, but favored personally the Matchless, as grown by Burpee. Among other good ones are Success, Livingstone's Perfection, Livingstone's Favorite, Stone and Ignotum, when pure seed can be secured. The Earliana, so largely grown in some sections, is not liked by canners. "There is too much waste," said Mr. Schenk. "They do not ripen evenly. All the green must be cut away, and as a consequence we do not like them." They are, nevertheless, amongst growers the most popular early tomato grown in the province. When the grower decides upon the varieties he will plant he should be particular to get the seed from firms making specialties of those particular varieties.

Mr. J. B. Dolan, of St. Catharines, also spoke, and advised beginners not to start on too small an area. At least two acres should be grown so as always to have a load to take to the car. A smaller quantity is scarcely worth the trouble. He also advised growers to strongly fortify themselves with crates.—A.B.C.

FROM THE FAR WEST—I enclose my renewal subscription for that valuable paper THE HORTICULTURIST. In this district great interest is shown in fruit raising, and all who have seen THE HORTICULTURIST speak very highly of it and of the suggestions continually in its columns, and no doubt 20 subscriptions could be obtained here. I note the strides THE HORTICULTURIST is making in up-to-dateness. The latter improvements are worthy your efforts.—L. B. Pangman, Salmon Arm, B.C.

Apples Not the Most Profitable

"The low price of apples in the Niagara district, most years," said Mr. Adolphus Pettit, of Grimsby, to THE HORTICULTURIST, "demonstrates that apples are not the most profitable crop for large growers, when land is worth $300 to $500 an acre, as it is in the Niagara district, and prices for apples are such as they have been during the past few years. Other crops, such as pears and grapes, are much more profitable in districts where they can be grown successfully.

"Fifteen years ago I had about 20 acres in apples. At that time we only got a crop every three or four years. We were unable to grow any Baldwins. A well-known grower told me that at that time the best orchard would not average over one barrel per tree yearly. As I found peach trees, planted every alternate row in my apple orchard, were paying me considerably the best, I gradually cut out the apple trees and substituted peaches. In one of my peach orchards I have hardly missed two crops during the last 15 years, while for 10 years I have not lost a crop in the second orchard.

"I have never sold my peaches for less than 27½ cents per basket, while in 1904 the price ran as high as 80 cents per basket wholesale. Apples to pay as well would need to realize the grower at least $2 per barrel. It has seemed to me that I have realized as much from one of my peach orchards in the last 10 years as an apple orchard of the same extent would have netted in 30 years."

The Fruit Tariff

E. Morden, Niagara Falls South

It is possible that fruit growers in asking for an increase of the tariff are acting without sufficient information. Has it been shown that the ordinary summer fruits of New York and Michigan enter Ontario and compete with similar fruits in their season of ripeness to as great an extent as do ours in their markets? No one, so far as I can hear, has ever attempted to do this. Let us remember that this Dominion has 4,000 miles of frontier, and that it includes Nova Scotia, New Brunswick, Quebec, British Columbia and other Provinces that do not look to Ontario for their fruit supplies. They never will do so. Let us remember that in winter, spring and early summer we necessarily import largely from the south. Let us remember that bananas, oranges and lemons come in for twelve months in the year either free or with a very light duty, and that these fruits really do injure our fruit industry very seriously, while apparently no one is asking for an increase in their case.

When we take the entire fruit imports of the Dominion for a year the sum total looks large and fearful fruit growers conclude that we have undue competition.

During the fiscal year ending June 30, 1905, imports of green fruits were as follows: Bridgeburg, $407; Niagara Falls, Ont., $6,339; Sarnia, $8,868; Windsor, $17,303, giving a total of $32,917. How much of this amount represents similar fruits that came in to compete with our fruits in their season of ripeness we know not. We do know that by far the greater portion consists of distinctly southern fruits, such as oranges, lemons, bananas and pineapples that come at all seasons, and of early fruits from the south that cannot compete with our similar fruits not yet ripe.

During 1904, Buffalo imported from Ontario as follows: Berries, 118,558 quarts, valued at $8,636, and apples valued at $1,305. The following figures are for the year ending June 30, 1905, and are below former years in most cases. Niagara Falls, N.Y., imported 123,161 quarts of berries, valued at $8,841. 768 bushels of apples, valued at $410, with some cherries and other fruits. In July and August of this year, with a short Canadian raspberry crop, Niagara Falls, N.Y., took 72,120 quarts, valued at $5,095. Detroit took up to June 30, berries valued at $5,396; apples, $1,511; pears and cherries, $1,843. At Port Huron fruits to the value of $7,536 were imported.

These points are directly in front of the best fruit growing sections of New York and Michigan. The sum total of these Canadian exports at these four points is $35,478. Our fruits compete directly with similar fruits in New York and Michigan, and in doing so face a specific duty that has been generally condemned by Canadians. When Canadian fruit growers can show that the Americans are invading our markets with similar fruits to a greater extent than we invade their market, they may decently discuss a tariff increase. Can it be shown? The challenge is open!

Trade in Fruit with Australia

Harry H. Davey, Melbourne, Australia

There are chances for Ontario to supply Australia with fruit, but the railage from Toronto would generally prevent any profit. British Columbia can supply us. We received Canadian apples in Sydney, Melbourne and New Zealand November 20, 1904, and also tested a few sample lots. They were much liked, and a few thousand bushels in good condition could be sold per week in Melbourne, Sydney and New Zealand to begin with. The lots received were consigned by Mr. J. E. Chipman, Vancouver, B.C. They sold up to 17s. per bushel of 40 pounds.

Canadian apples can only obtain a market from about October 30 to January 12 in each year; pears from July to January. Most other fruits would find bare markets because of an opposite season.

Cold storage in steamships from Vancouver is 60s. per ton. To this add freight from Toronto and other charges, and you will see how the matter looks. If Ontario growers can do something to promote this trade we shall be glad to know and to reciprocate with Australian choice fruits when your markets are bare of local supplies. Mr. J. E. Chipman, Vancouver, will be glad to work with Ontario growers in the matter of freight rates from Toronto to Vancouver for Canadian fruit, and from Vancouver to Toronto for Australian fruit in the reverse season.

Much can be done with small packages of choice fruits, well ventilated and kept at an average temperature of not more than 40 degrees nor less than 34 degrees Fahrenheit.

Fruit Trade with France

A. McNeill, Chief of Fruit Division

Several French firms have been buying Canadian apples in a small way for a number of years. The trade has grown somewhat irregularly until last year, when it formed a very marked feature of the business. The French trade demands a fairly firm apple, such as the Russet, Ben Davis or Stark, a class of apple that is increasing very rapidly as the newer plantations come into bearing. Unfortunately, the French buyers in a few instances fell into the hands of the apple sharks, and the reputation of Canadian fruit suffered accordingly. As the buyers increase in experience the trade is likely to assume large proportions.

The following extract from a letter to the Fruit Division has been received from a prominent Paris firm: "We are able to say that generally speaking the fruit marked XXX is all right, there being only four or five per cent. of the barrels wasted in this mark. In XX fruit there is a larger proportion of wasted apples. Many packers leave in this brand apples that should be placed in the X brand, so that the XX mark cannot be depended on. Canadian XXX fruit can be sold in the original package, which is not usual in the French trade, but we are obliged to resort all the XX grade. If Canadian packagers would pay as much attention to the packing of XX fruit as they pay to the packing of XXX fruit, their apples would meet with a greater demand than those from the United States, which do not reach us in as good condition."

This firm also referred to the very great difference in the weight of barrels, noting that they varied from 165 to 150 pounds gross, partly as the result of different varieties, but mostly as the result of lack of uniformity in the size of the barrels.

There is a very strong argument in this letter in favor of a definition of No. 2 apples as well as for uniformity in the size and weight of the package. These two points have often been referred to as ones that it would be desirable to have settled, but it is only when an actual customer in a foreign land marks them out as real hindrances to trade that the full force of the arguments in favor of these reforms comes home to the Canadian fruit grower.

Fruit Growing in British Columbia

J. C. Cooper, Brampton, Ont.

Probably no industry of British Columbia has been so full of surprising results as fruit growing. By leaps and bounds it has emerged from comparative insignificance until now tons upon tons of delicious fruits are shipped annually to the prairie districts as far east as Winnipeg, netting the growers handsome profits.

The observing traveller, steaming along the beautiful mountain lakes, although overwhelmed with the grandeur of the scenery, finds it hard to understand where any fruit could grow. A short distance up from the lake, however, there are large tracts of level, fertile soil The luxuriant growth of the trees and the choice quality of the fruit convince the sightseer of the adaptability of these tracts for fruit culture. The soil is kept very rich and constantly moistened by the little mountain springs trickling down from the higher parts.

It was my good fortune to be at Nelson during the annual fruit show, and examine a large quantity of fine specimens from these orchards. Apples, peaches, plums and pears, as well as a large display of excellent vegetables, were in splendid assortment from the various districts, and as the president pointed out the results from each I was struck by the magnitude and unlimited possibilities of this productive territory.

Several boxes of fruit packed ready for shipment were on exhibition, and were a great credit to the growers. They make a specialty of this department, and a large portion of their success is due to this fact. Many Ontario growers might well profit by their example.

Remembering that this industry is of very recent development, we may hope to see it yet eclipse even the mining and lumbering resources.

Great Britain's Demands

While in Toronto last fall Mr. Thos. Russell one of Glasgow's leading fruit dealers, in an interview with THE HORTICULTURIST, said: "There has been a great improvement in the packing of Canadian fruit during the past few years, and the eight-hooped barrel is far ahead of the one with only six hoops. Nothing but the very best fruit should be sent to Glasgow in boxes. Even No. 1 should be sent in limited quantities, as only a small supply is wanted for first-class customers.

"The Canadian Government should have a more definite standard for number two fruit. Very frequently apples are sent to us marked XX when the fruit is not at all uniform, and sometimes nothing but trash. Canadian growers should not attempt to export number three fruit. We like to see fruit nicely packed. The finer the packing the more money is made, whereas poor packing means low profit or perhaps none."

The life histories of the common insects found on vegetables, fruit and shade trees in Ontario are outlined in the report of the entomologist and botanist of the Central Experimental Farm, Ottawa.

Interesting Bulletins and Reports

SEVERAL of the colleges and fruit esperiment stations have been more liberal than usual this season in supplying valuable information to the fruit growers by means of bulletins. In addition to those outlined in recent issues of THE HORTICULTURIST, the following bulletins and reports will be found of interest to those engaged in horticultural pursuits:

ONTARIO FRUIT GROWERS

The work done by the Fruit Growers' Association of Ontario is outlined in the 37th annual report of that association. This volume includes the discussion that took place regarding the revision of the constitution, as well as the addresses given by the leading speakers at the various sessions and the discussions that followed. Reports from fruit growers in Algoma regarding fruits that are hardy in northern sections, and from Prof. H. L. Hutt, of the O.A.C., and Mr. W. T. Macoun, of Ottawa, regarding new fruits that promise to be of value, are contained. Spraying, cover crops, cooperation and other subjects of vital interest to orchardists, are carefully discussed by competent horticulturists. This report can be had by applying to the Dept. of Agri., Toronto.

SPRAYING FOR SCALE

Bulletin 273 of the N.Y. Expt. Sta., Geneva, N.Y., contains an outline of tests of spraying mixtures made in treating San Jose scale. These tests confirm the results of previous experiments that the sulphur washes applied in the fall are effective. No advantage was shown by the addition of salt to the sulphur wash. The self-boiled mixtures did not give as satisfactory results as those boiled by fire or steam. The experiments indicated that kerosene-lime sprays were not as efficient nor as uniform in their effects as the sulphur wash. Among the soluble oils, Scalecide was satisfactory, and was said to be promising as a dormant-season treatment for the scale. Spring applications, however, retarded the development of buds, while the summer spraying caused severe injury. The results of the tests did not lead the officials at the station to advise the abandonment of the well-known standard sprays.

SPRAYING AT NEW JERSEY STATION

A valuable compilation of information regarding spraying with the different insecticides and fungicides in treating the enemies of the different crops, and a description of spray pumps is given in bulletin 194 of the N.J. Expt. Sta., New Brunswick, N.J. The crops are arranged alphabetically, and the improved methods of treating each pest carefully outlined. The merits of the various insecticides and fungicides, including formalin, carbon bisulphide and hydrocyanic acid gas, are fully discussed. Spray pumps recommended for small gardens and orchards, as well as power sprayers and the nozzles that are most satisfactory, are described.

A DELAWARE BULLETIN

The results of experiments conducted at Del. College Expt. Sta., Newark, Del., to show the effects of different strengths of kerosene lime emulsion on San Jose scale are given in bulletin 73. It is pointed out that the principal causes of non-success were improper preparation of the mixture and incomplete spraying. Two thorough sprayings, one in late spring and the other in late fall, it is said, should be the minimum. It is claimed that if there is any one best time it is late Oct. or early Nov., as the insects at that time have not glued their scaly covering to the bark and the remedy reaches the tender body beneath the scale very easily. Besides, the trees have ripened their wood and can endure a moderately strong insecticide. The preparation of the kerosene lime is outlined as follows: Stir the kerosene and lime in a barrel thoroughly; add 10 to 20 gals. of water, and stir to loosen the kerosene and lime from the bottom and sides of the barrel; pour in water until the barrel is more than three-fourths full, then with a hoe splash and pound the mixture for 4 or 5 mins. to emulsify it, and fill the barrel with water. Where carefully made and thoroughly applied it is claimed that this mixture is equal to any of the standard remedies. The 20% mixture, which consisted of 10 gals. kerosene, 40 lbs. lime and 38½ gals. water, was more effective than lime, sulphur and salt, or kerosene emulsion. As a general rule nothing stronger than 25% strength is advocated, but in spring, when the trees are crusted with the scale, it is said to be more economical to use 30% on peach trees and 30 to 35% on other trees. The 25% K.-L. mixture is composed of 12½ gals. kerosene, 50 lbs. lime and 34½ gals. water, while the 30% mixture consists of 15 gals. kerosene, 60 lbs. lime and 30½ gals. water.

MAINE ORCHARD NOTES

Bulletin 128 of the Me. Expt. Sta., Orono, Me., contains notes on spraying for scale insects, caterpillars, apple scab and pink rot, results of unbalanced ration on fruit, winter injury from freezing and from mice, and suggestions regarding handling fruit and pruning. A canvass of the orchards in Wayne and Orleans counties showed that 66 sprayed orchards, representing 626 acres, yielded at the rate of 280 bus. per acre in 1903, while 107 unsprayed orchards, representing 673 acres, yielded at the rate of 253 bus. per acre. For the sprayed fruit the average price was $2.02 per bbl., while the unsprayed fruit brought only $1.80. The value of spraying is clearly shown by the following figures: Trees unsprayed, average income per acre, $103; trees sprayed once, average income, $139; trees sprayed twice, average income, $143; trees sprayed three times, average income, $184; trees sprayed four times, average income, $211.

In spraying for the apple scab it was clearly demonstrated that even in a bad season there was a difference of 50% in the amount of fruit on sprayed and unsprayed trees. The best results were obtained from the use of Bordeaux mixture. When there was no crop of fruit the increased vigor of the trees, resulting from clean, healthy foliage, more than repaid the cost of spraying. Applications just before the buds burst and immediately after the blossoms fall give the best results. On a wet season at least four treatments, at intervals of two or three weeks, are recommended.

HORTICULTURAL SOCIETY REPORT

A report of the 51st annual meeting of the Western N. Y. Horticultural Society contains much that is of interest to fruit growers. Among the subjects discussed are: "The Formation of Fruit Buds," "The Blight Canker of Apple and Pear Trees," "Relation of Tillage to Improvement of Orchards," and "The Prospect for Education in Horticulture." Garden vegetables, shrubs, flowers and bedding plants also are discussed. These subjects are handled by such horticultural authorities as Prof. L. H. Bailey, of Cornell; G. T. Powell, of Ghent, N.Y.; W. H. Jordan, of the N. Y. Expt. Sta., and others. A copy of the report can be had by writing to Jno. Hall, Sec., Rochester, N.Y.

BULLETIN ON CRANBERRIES

Varieties of cranberries, cultural methods, insect pests, grasses usually troublesome in cranberry bogs, and various other information of interest to those engaged in growing cranberries is to be found in bulletin 119 of the Agri. Expt. Sta., Madison, Wis. Flooding, and other means of preventing frost, are fully outlined. Various methods of planting, the care of the young plants, and the methods of harvesting adopted in the leading cranberry districts, are described. Those interested in the cultivation of cranberries should secure this valuable bulletin

SPRAYING FOR POTATO BLIGHT

Results of experiments conducted in spraying for potato blight during the season of 1905, are given in bulletin 236 of the Mich. Agri. Expt. Sta. Correspondence with potato growers throughout the state showed that a large number did not know what Bordeaux mixture was, and most of them believed the blight to be incurable. The reasons for so few growers spraying were attributed to: (1) Ignorance as to the cause of the disease, (2) Not knowing there is anything that will prevent it, and (3) A belief that the results will not repay for the time and trouble required to do the spraying. The bulletin attempts to set the growers right on these points. After outlining the cause of the disease and describing it fully, the results of numerous experiments conducted at the college are given. Unsprayed potatoes gave a gross gain of $20.50 per acre; those sprayed with lime water every four days, from July 22, netted $26.25; those sprayed with Bordeaux mixture (4 lbs. copper sulphate, 4 lbs. lime, 50 gals. water) netted $34.40; those sprayed with Bordeaux mixture every 15 days netted $36.75; those sprayed with Bordeaux mixture every 10 days netted $40.25; and those sprayed with Bordeaux mixture every four days netted $40.75. The cost per acre per application was found to be about 72 cts., but it would be much less on large field operations. It is claimed that two acres or more could be sprayed thoroughly at a total outlay of 55 cts. per acre.

ONTARIO VEGETABLE GROWERS

The first annual report of the Ont. Vegetable Growers' Assn. contains the history of the formation of the assn. and an account of the valuable work done during the short time since its organization. The report of the first annual convention includes the following addresses: Truck Farming in Delaware, by A. N. Brown; Growing Vegetables at Guelph, by H. S. Peart, B.S.A.; Fertilizers for the Vegetable Grower, by Prof. R. Harcourt; Growing Vegetables under Glass, by J. L. Hilborn; Experiments in Potato Growing, by Prof. C. A. Zavitz; Injurious Insects and Fungii of the Garden Crops and How to Combat Them, by T. D. Jarvis, B.S.A.; The Growing and Marketing of Cauliflower, by A. McMeans; and Experiments in Vegetable Growing at the Central Expt. Farm, by W. T. Macoun. Many interesting discussions, also, are included.

The Outlook in the West

J. J. Philp, Winnipeg, Man.

To one standing on the high ground in the centre of the continent and looking toward the east and the west, and then withdrawing his gaze for a look at his more immediate surroundings, those surroundings being the city of Winnipeg, there must come a feeling of intense satisfaction at the prospect for this season's business. And to no line of business activity is the prospect more encouraging than to the fruit interests of Ontario fruit growers.

Meeting at the Dominion Fruit Conference in Ottawa, as we did, the principal men from the several provinces, one could not help but admire the unlimited optimism and the exhilarating breeziness of the B.C. contingent. Granting, however, all they claim that they can grow fruit without spot or blemish, there is this to be remembered that the western provinces are becoming populated with such rapidity that it will take the B.C. growers all their time to attend to the wants of those nearer home than is Man.

As a result of the labors of the convention and the improved legislation in connection with the Fruit Marks Act. This act in the future, will take higher ground than it has ever done in the past. One may search in vain during the course of an extended trip, as I did,

and not find any one who objects to the principles or operations of the act.

In none of a number of large cities in the U.S. and Canada that I visited while on my way to the conference did I find the same impulses to business or the same impetuous rush as in Winnipeg. One has but to pause and consider for a moment the causes that are today contributing these impulses and this rush, to feel that it is all legitimate, and to a very considerable extent lasting. These causes are threefold: immigration, railroad building and the hope and prospect of a bounteous harvest.

But what has all this to do with the fruit business? Very much indeed. I rejoice to know that the Ontario fruit growers are awakening to the immense possibilities of this country as a market for their fruit, as well as to know that there is being aroused a feeling that they are able to compete, and they are going to compete with any or all other fruit growing sections for the supremacy in this market.

But out of all this there arises a great danger, the danger that many will allow their hopefulness and desire for large returns to get the better of their good judgment, and thus be led into the mistake of letting everything go. This will prove a very grave mistake. Care in selecting and attention to methods will always pay, and the greater the care and attention the greater will be the satisfaction attending the results of your ventures. More care and attention in the future will be exacted from the rank and file of the average apple packer.

The Longhurst Peach

J. W. Brennan, Grimsby, Ont.

The Longhurst is what I would call the best commercial peach grown. When I say *best*, I mean best in quality. This statement is confirmed by the canners, and there also appears to be a growing demand by the domestic canners of the household. It is surprising to read over the list of peaches recommended by the Board of Control of the Experiment Stations, and find that the Longhurst is not in the list of commercial peaches. Is it because some growers make a lamentable failure of this peach? If it is, it is a very lame excuse.

I once had the impression that it was a poor, useless, ugly, forsaken looking peach, but my convictions have turned. Two years ago I shipped a customer a few baskets of nice Longhurst peaches, and I presume it was the first of that variety he had received. His customers found them all that could be desired. Last season I received the same customer's order for peaches, but for no specified variety. Unfortunately for myself as well as for his customers he did not receive any Longhursts. In a short time I received a letter from him saying his customers were complaining that the peaches were not of as good quality as those sent the year before. This is only one of many instances that could be given, but it shows that the Longhurst is a commercial peach. If Longhurst peaches are planted money can be made out of this crop, but you must attend to business and give them attention; in return they give standard oil dividends. They must be pruned severely and thinned rigorously. If you prune as thin as you should, you will have a feeling of compunction that you are overdoing the thing. Never mind that; go ahead and you will look brighter in the autumn. Plenty of nourishment, too, is demanded. Experiments conducted at the N.Y. Expt. Sta. showed that it required much more than Elberta. The recommendations made by that station are: Longhurst, 90 lbs. nitrogen and 85 lbs. potash per acre; and Elberta requires 56 lbs. nitrogen and 50 lbs. potash per acre. It is owing to its high feeding propensities that it is such a rich fleshed peach of beautiful color when canned, and sweet and delicious. If you are prepared to give the Longhurst the attention which any good thing requires, you will be amply repaid by a crop of the best commercial peach grown.

Impressions of the Fruit Conference

FRUIT growers from the different provinces have settled down to business after the big conference at Ottawa. That much benefit was derived by the delegates, and that the fruit industry in Canada has received a mighty boost is the opinion of all who know anything about the business done and the questions discussed. Expressions of opinion have been received by THE HORTICULTURIST from several of the delegates regarding the most important matters attended to.

A BRITISH COLUMBIA DELEGATE

A communication from Mr. Martin Burrell, of Grand Forks, B.C., read: "What I considered most important at the conference may be summed up thus: (1) The desire, so largely carried into effect, of creating a uniform system of packages for the Dominion; (2) The evident determination on the part of those present to simplify the grading and branding of packages, which must have a most beneficial effect on our export trade; (3) The emphatic opinion expressed that the size of the fruit industry now warrants the most systematic and comprehensive work along statistical lines; (4) The soundness of the contention that express companies should be placed under the control of the Railway Commission.

"In addition to these definite accomplishments, the mere fact of representatives of the industry from all over the Dominion meeting in such a way to co-operate in all matters which make for the advancement of horticulture in Canada has done, both in a direct and indirect way, an immense amount of good."

WHAT NEW BRUNSWICK THINKS

Mr. J. C. Gilman, of Fredericton, N.B., expressed his satisfaction with the results of the conference as follows: "It was pleasing to note, at the late fruit conference, that the prevailing sentiment was Dominion interests first, Provincial or local afterward. It was also encouraging to the provinces where fruit culture is yet in its infancy, to learn that sections where fruit growing has become well established, still recognize the importance of missionary work in the form of object lessons practically given on each part of the fruit growers' work, from the setting of the tree to the closing of the package of well-graded fruit ready for market.

"The suggestion that fruit inspectors and others capable of such work, should continue to visit as many fruit growing sections as possible, to instruct and encourage farmers in adopting the best methods to ensure success, was a good one. Cooperation gives a good account of itself, in grading and packing and selling, showing the advantage and need of more skill for this part of the work than the average farmer can hope to bring to it, with such help as he can employ, for the rest of his farm and orchard work. The uniform grade, and such quantities of each variety, as will attract the attention of buyers, must be a strong argument in favor of co-operation for this end of the work, where enough fruit can be furnished to make a central packing and storage house a paying enterprise Some future conference will find it necessary to deal with the introduction of new fruits, to restrict, to some extent, the multiplying of varieties, many of them of little value, while those considered by some competent and recognized authority as worthy of cultivation, shall be properly catalogued as such for the guide of planters."

HOW NOVA SCOTIA GROWERS FELT

Mr. S. C. Parker, of Berwick, N.S., wrote: "A very interesting feature of the gathering was the comradeship established, almost from the beginning, between the delegations from B.C. and N.S. By a happy coincidence they met at the same hotel, and before the conference formally opened, these delegations were bosom friends. Living at the same table; vieing with each other in telling big stories of both fish and fruit; united for offensive and defensive work at the conference.

"Perhaps it is local prejudice, but it seemed to me that the N.S. contingent had a fuller idea of the situation and understood the questions better than our colleagues from the other provinces. The continuous threshing of the topics in the Fruit Growers' Assn. had given our men a thorough understanding of all the questions coming before the conference, and a complete grasp of the details. R. S. Eaton made a big score by suggesting an interview with the Minister of Agriculture regarding an experimental orchard in the Annapolis Valley."

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57 BRANCHES THROUGHOUT THE DOMINION

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Plant Breeding

Horticulturists who are interested in the production of new forms of plant life will find much that is interesting and of value to them in their work in Prof. L. H. Bailey's book entitled "Plant Breeding." Variation in its different phases is outlined. The influence of physical environment, food supply, climate, etc., are fully discussed. The production of new varieties and the most approved methods to be adopted in acquiring the qualities desired are fully taken up.

To more clearly explain the principles and discussions, concrete examples of work done with dewberries, blackberries, apples, beans, and cannas, are outlined. "There is nothing mysterious about the subject," says the professor, "so far as the cultivator is concerned. He simply sets his ideal, makes sure that it does not contradict any of the fundamental laws of the development of the plant with which he is to work, then patiently and persistently keeps at his task. He must have good judgment, skill, and inspiration, but he does not need genius." This book can be procured from THE CANADIAN HORTICULTURIST.

Classified Advertisements

Advertisements under this heading will be inserted at the rate of ten cents per line, each insertion; minimum charge fifty cents in advance.

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POULTRY DEPT.

Conducted by
S. Short, Ottawa

Poultry can be kept with profit by any person who has a small garden. Three runs should be supplied so that they will not be too closely confined. Apple and plum trees and black currants may be planted in two of the runs for shade purposes, and the third run may be used to grow early vegetables.

The fowl may be kept in the two runs containing the fruit trees until just before the fruit ripens, when thep may be changed to the run which has grown the early vegetables, for the fowls are fond of ripe fruit. In this way the land produces fruit and vegetables, as well as furnishing a run for the poultry. I have kept fowl in this way for years. The hens and the garden work in harmony and benefit one another.

A sensible breed of fowl must be kept, that is a breed that can be easily managed, and one that is hardy and does well in confinement. In the poultry world there are varieties and colors to suit all tastes. The best breeds for a suburban home are the Plymouth Rocks, Wyandottes or Orpingtons. These combine laying and table qualities. Fowl of the breeds mentioned will seldom fly over a fence five feet high, made by a bottom board a foot high and four-foot poultry netting stretched between posts.

Hens in a garden do considerable damage in a very short time. If at liberty they go at once to wherever the ground has been freshly dug to scratch and dust themselves, They eat half-grown gooseberries and red currants, raspberries and strawberries, but not black currants. They delight in picking holes in the tomatoes just as the latter are coloring, they walk over freshly painted verandah floors and go into sheds and upset things if you let them. But there is a place for everything, and the hens should be confined in their runs during the summer. Early in the spring, before vegetation starts, they may be allowed their liberty and will scratch up and devour many a cut worm, pine beetle and other destructive grubs that do much damage later on. After cultivation begins they may be allowed to run through the garden half an hour before roosting time, and they will not stop to scratch, but dart through the berry patch catching bugs, worms and insects that are just coming out from the ground at dark for their nightly prowl, a fact well known to the hens. Darkness drives the hens to roost, and you have only to shut the gate to the run before going in for the night.

Another benefit is derived by confining in a portable coop, placed in the garden, a hen with a brood of chickens. The hen cannot get out, but the chicks can, and being too small to scratch, they roam through the garden picking insects from the leaves and stems of plants, thus doing good. I always put chickens in this way among my asters, and have no trouble with the aster beetle. Lastly, a valuable fertilizer is obtained from the poultry which gives excellent results when applied properly.

Overripe corn, peas, tomatoes and other vegetables can be fed to the fowls and much reduce the cost of their food. Hens treated in this way lay well, keep in good condition for table, and the chicks grow rapidly. If hens are kept, by all means keep pure breeds, for as flowers, fruits and vegetables are exhibited, so may pure bred fowl be exhibited, and the showing prove just as interesting, and in many cases just as exciting, as the exhibiting of any other line of agricultural production.

PROFIT ON A CITY LOT

A reader of THE HORTICULTURIST enquires as follows: "Can hens be kept profitably on a city property where they have a run of about 30 x 6 ft., and how many fowl could be kept properly on such a space?"

Not more than eight females and one male, nine in all, should be kept in a run of the above size. That number, with ordinary and regular care, would do exceedingly well the first year, so well perhaps, that the temptation would arise to increase the number, which would be a fatal mistake. As the first crop of fruit or vegetables from new ground is always the heaviest and largest, so will fowl always do better the first year in new quarters.

Any of the utility fowl would answer. If the soil is sandy or porous, white birds would look well, but if the soil is heavy or clayey dark plumaged birds are better, because they would not show the mud or dirt that would inevitably stick to their feathers. Also, if the soil is heavy, a dust bath must be provided. Kept in such small quarters, grit and lime must be supplied. An excellent plan is to get a load of broken plaster from the ruins of a dwelling house that has been pulled down. This material may be had usually for the expense of carting, and is a combination of grit and lime.

The fowl spend most of their time as near the entrance to the pen as they can get, and this part of the enclosure rapidly becomes coated with droppings. These should be dug under at the first indication of that fact. I would not recommend trying to raise chickens in this pen in addition to keeping the layers, and would suggest that early pullets be secured from some breeder who has raised them on grass runs, for reared that way the birds have usually a much stronger constitution than those raised in cramped quarters.

COST OF BUILDING

Another question: "What would a building cost to properly house the fowl kept in such an enclosure?"

The cost would depend on the kind of house built, and which is the best kind is a much debated question. The trouble most breeders have to contend with is to keep the frost from forming on the walls inside. There are three ways of building to prevent this. The first and cheapest is a building with walls of one inch matched lumber, and windows hinged at the top so that they may be opened on the inside every day. Houses of this description have been used with success where the temperature does not go below zero. They are cold but dry. Another form of building with walls two inches thick is made of inch boards and matched lumber with paper between. Large window frames with strong grey cotton neatly stretched over instead of glass, are hinged at the top so that they may be opened from within. This gives perfect ventilation. In each of these houses the roosts are put in the warmest corner and enclosed with tight boards on three sides and the front closed at night by dropping a curtain.

The third way of getting good ventilation is to build warmly, use double windows, put in a chimney and use artificial heat. If the temperature is above freezing, the frost will not form on the walls, and any moisture in the atmosphere will pass off through the stove or furnace.

Fowls have done well in houses built in the manner described in the first plan. They were allowed to eat snow and had to rough it generally. They did well under these conditions in the States of Connecticut and Rhode Island. The second plan would, I think, be better for the colder parts of Ontario, and the third is the method most used by the professional poultry men, who keep Leghorns for the production of eggs in winter. When building, allow at least six sq. ft. for each bird, and the lower the roof the warmer the pen. The shape of the building may be regulated, for the sake of convenience, to the position in which it has to be placed.

Boiling the Lime Sulphur Wash

ED. CANADIAN HORTICULTURIST: I notice the article referring to lime and sulphur used in this section and the diversity of opinion among growers. The criticism is a little misleading. There is not as much difference as would appear first as to boiling with steam and by the action of the lime alone. All agree that it is possible to boil by action of lime heat, *if lime is good and everything works right*, but if something happens you cannot add more heat, as can be done by the steam, and therefore we feel that it is not safe to encourage the grower to take any chances with having a bad batch, as one tank full of mixture not up to standard will leave from 40 to 60 trees with scale not killed to breed for another season. The new beginner

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WOODVIEW PULLETS WON
First in class open to the world; Special for best Barred Plymouth Rock female at the show; and the Canadian Barred Plymouth Rock Club's Special for best Pullet.

At the International Show at Detroit, January 6th to 11th, 1906
WOODVIEW BIRDS AGAIN WON
In competition open to the world.—First pullet; Second cockerel; Second cock; and Special for the best shaped male at the show.

OUR MALES ARE BRIGHT STRAIN FEMALES LATHAM STRAIN
the best obtainable. EGGS FOR HATCHING, $2.00 PER SETTING UP.
MATING LIST MAILED FREE UPON REQUEST CORRESPONDENCE SOLICITED
Mention The Canadian Horticulturist when writing. John Pringle, Prop.

always wants the easiest plan naturally, and learns later, to his sorrow, that he had better have taken the advice of some older grower.

Then the lime and sulphur is very hard on the hose, hands and the eyes, and the grower thinks that it may be too strong, and if he hears anyone or reads of someone saying that less sulphur and lime can be used, he at once wants to use less material. Now, the way to arrive at the results and quantities most in use is to take the results of our representative growers for two seasons. A committee appointed by the Niagara Peninsula F. G. Assn., after careful examination, and after comparing results, reported that 18 lbs. of sulphur and 20 lbs. of lime to the bbl. gave the best results. A bbl. holds 45 to 48 imp. gals. Less than this is not safe to use; more, I believe, will not do any harm. The mixture should be boiled until it begins to turn a greenish color. When this has been applied thoroughly in every instance, examinations later in the season have shown that nearly all the scale has been killed A little extra trouble or cost in preparation is time and money well spent. We cannot be too careful in spraying.—Robt. Thompson, St. Catharines.

How to Grow Ginseng

An excellent book for those interested in growing ginseng has been published by Mr. M. G. Kains. A short account of the history and botany of this plant precedes the directions for cultivation, harvesting and marketing. In discussing the methods of starting the crop Mr. Kains says: "The easiest way to commence ginseng cultivation is to collect the plants in the neighborhood and transplant them. Dig them either early in the spring, as new growth begins to appear, or in the fall when the tops are dying. It is better to transplant in the fall, because the roots are more easily found and are not so easily injured. Always take the greatest care to preserve the bud at the crown of the root."

If it is decided to start from seeds they should be gathered while the pulp is still soft, after they are fully ripe and before they become dry. The seed can be sown at once, or stored over until spring. If sowed at once no more trouble is entailed, but 18 months must elapse before it can be made to sprout, and there is much risk because the seed bed may become dry, and the seed thus be rendered worthless.

The best way to store the seed is to stratify it. Put a mixture of leaf mould, sand and loam in the bottom of a box and scatter the seed in layers not more than one seed deep, with at least half an inch of earth between the layers. The boxes can be stored in a cellar or buried where there is no danger of them becoming wet, but where they will always be moist enough to prevent drying out. Frost improves their germinating qualities and does not injure the seed. Friable loam, light rather than heavy, clear of stones, chips and other obstructions, and well supplied with decayed vegetable matter, is recommended as the best soil. Those interested in growing ginseng can procure a copy of this book from THE CANADIAN HORTICULTURIST.

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The Canadian Grocer

which reaches the wholesale and retail handlers of fruit in all parts of Canada. Write for a sample copy and advertising rates.

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WE WILL PREPARE THE MATTER FOR YOUR ADVERTISEMENT WITHOUT EXTRA COST
10 FRONT STREET EAST, TORONTO
Mention The Canadian Horticulturist when writing.

Fruit Outlook in Niagara District

FRUIT prospects throughout the Niagara district are promising. The season is later than usual, but no reports of serious damage to any crop are heard. Everything, at this date, indicates that crops in all lines will be a full average. The following reports from leading centres in the district speak for themselves:

ST. CATHARINES

Never in my recollection has the country looked better than at present. This, possibly, is due to the fact that all varieties of fruit appeared to come into bloom at nearly the same time, and what came in first hung on the trees well. We have had favorable weather for the setting. On the nights of May 19 and 20 we had a close call from frost. The thermometer registered 30°, making 2° of frost, but no injury of any kind was caused and the weather has again turned warm.

Early tomatoes are planted out in many instances and looking well, and the late plants are coming along finely. Strawberries just commencing to bloom and promise a fine crop, as hey have wintered well. In many of the fields the plants are rather thin, owing to the depredations of the white grub last season. Pears and apples are very full of bloom. Yellow-fleshed varieties of peaches have a medium show of blossoms.—Robt. Thompson.

JORDAN STATION

Strawberries are in full bloom; about two weeks later than usual, and the plants have made less growth than usual, which, to me, indicates a light and late crop. Raspberries and currants and all other varieties of fruit at this time are promising a full crop, yet in many of them it is too early to give any definite expression as to the final outcome.—C. M. Honsberger.

BURLINGTON

Strawberries probably will be a little below an average crop and possibly the season will be a little later than last year, which began about June 18. Raspberries will be an average yield, and with more acreage there ought to be a plentiful supply of this fruit. Other small fruits will not vary much from last year's figures.—The Burlington Canning Co., Ltd.

ESSEX COUNTY

A report from Leamington is as follows: "The fruit outlook is good. Peaches promise a full crop; cherries very good; pears, also good; strawberries, full of blossom and in some favored spots berries are now ½ to ¾ inch in diameter. Plums show a full crop, apples now in full bloom. —E. E. Adams.

Pointers on Transportation

In an address delivered at a meeting of fruit growers in the Niagara district, Mr. P. J. Carey, D.F.I., Toronto, pointed out a few particulars in which the facilities for transporting fruit to the N.-W. may be improved. The railway companies should make special fruit runs to North Bay, say twice a week, and these specials should be scheduled to connect with the fast freight that regularly runs from North Bay to Winnipeg—this scheduled connection should allow plenty of time for re-icing. Five days should be the maximum time from points in Ontario to Winnipeg.

Shippers should bear in mind that the greater the number of cars in a shipment the better the treatment received at the hands of the transportation companies. The question of icing and re-icing is important. Mr. Carey found on one occasion, when accompanying a shipment to the west, the bunkers only three-quarters full immediately after re-icing—a serious matter.

According to the experience of the St. Catharines Cold Storage and Forwarding Co., it is better to cool the fruit before it is put in the

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Gather Your Cherries with THE ONLY SUCCESSFUL CHERRY PICKER
The cherry is not touched or bruised by the hand. The long, unsightly stem is severed and most of it is left on the tree; hence the fruit looks much more attractive in the box or basket. It also keeps much better and the fruit buds for the next year's crop are not injured. It is held in one hand and operated easily and rapidly. The other hand is free to hold the twigs, etc. Every cherry that is clipped goes into the cup and is secured. The picker has been thoroughly tested and gave good satisfaction. Sent postpaid on receipt of 75c. Two for $1.25. Money refunded if not satisfactory.
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HAMILTON - ONTARIO

car. This pays in the saving of ice alone, besides its advantage in extending the keeping period of the fruit. For best results, fruit should be wrapped and the paper for wrapping should be lighter than newspaper and heavier than tissue paper. Shippers should use uniform packages for ease in loading cars, and for appearance on the market, to say nothing of increasing the selling price. Only the higher grades of fruit should be shipped to the west.

Always the Same Standard

A. McNeill, Fruit Division, Ottawa

In reply to a complaint that certain apples were not good enough for the No. 1 grade, though thus marked, a grower says: "I supposed the year would have quite a lot to do with governing the trade. If the strict letter of the law is put in force with regard to No. 1 apples there will be very few in this neighborhood."

It cannot be too generally impressed upon packers and growers that the description of a No. 1 apple never varies. Our export apples reach many persons who have no idea of the crop conditions in Canada, and this export trade could never be built up except by maintaining a uniform quality in our No. 1 grade. A No. 1 apple in any year is an apple practically without blemish and of good size and color.

Picking Cherries for Market

The cherry, unlike most other fruits, does not separate readily from the stem or tree. If pulled it is liable to be bruised or torn. The common way is to catch the stem with the thumb and finger and tear the fruit from the tree with others in the same cluster, and put them in quart boxes or half bushel baskets for the market. In recent years, however, there has been an increasing demand for "clipped cherries." There are several reasons why dealers prefer them to those that are pulled. The buyer wants fruit and not stems, Long stems and clusters occupy too much space in the box, and with the dried brown calyx they do not present the bright, pleasing appearance of the "clipped" fruit. Some growers claim that the trees from which the cherries have been clipped are in better condition for a crop the next year than those from which the fruit has been pulled. In pulling, many buds, small twigs and fruit spurs are injured, bark stripped, etc.

There are several methods of clipping. Some use shears in one hand and try to catch the fruit in the other. This is not satisfactory because the hand is too small to hold many, and some fall to the ground. Some spread sheets under the trees and shear off the cherries and let them fall into it. The sheets are more or less in the way of the ladders and pickers, and the fruit must all be gathered up and separated from leaves and twigs that fall and are, consequently, sometimes bruised.

An instrument has been devised that will shear and catch the fruit and at the same time is easily managed with one hand and not too

PERMANENT meadows should have an annual dressing of 500 pounds per acre of a fertilizer containing eleven per cent. POTASH and ten per cent. available phosphoric acid.

This will gradually force out sour grasses and mosses from the meadows, and bring good grasses and clovers; thus increasing the quality as well as the quantity of the hay.

Our practical book, "Farmer's Guide," gives valuable facts for every sort of crop-raising. It is one of a number of books on successful fertilization which we send on request, free of any cost or obligation, to any farmer who will write us for them.

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Mention The Canadian Horticulturist when writing.

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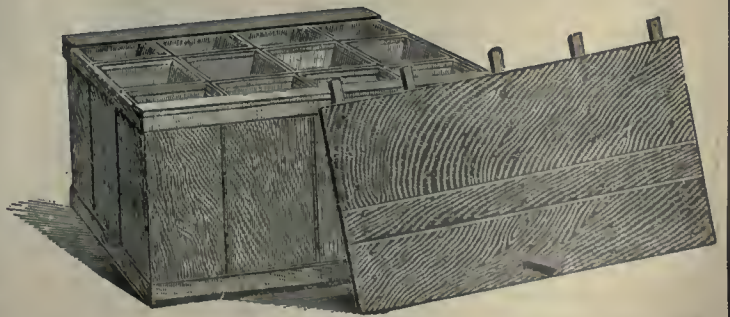
Baskets
We are Headquarters for all kinds of Splint Baskets

VENEER
supplied for the protection of trees from mice during winter

FRUIT PACKAGES
A Specialty
SEND FOR OUR PRICES
THE OAKVILLE BASKET CO.
OAKVILLE, ONTARIO



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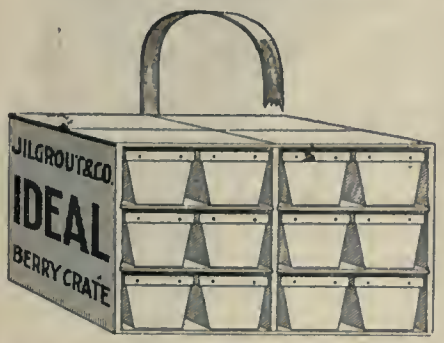
THE
Best are Always the Cheapest



If you want baskets or berry boxes that will carry your fruit safely to the consumer, send your order to

C. W. VanDuzer
BASKET MANUFACTURER
GRIMSBY
Mention The Canadian Horticulturist when writing

large to be handy among the limbs of the tree. The other hand remains free to hold the twigs and bend in the limbs or steady the operator. The maker says that he got the idea from the rabbit's mouth, with the incisors for cutting and the cheeks to retain. Necessary modifications were made to adapt it to the work that it was expected to accomplish. The cutting edges pass like shears, and are about 1½ in. wide. The attached tin cup holds about a pint, and is easily emptied into a basket or nest of boxes hung in the tree or on the ladder. The few leaves and faulty fruit can be thrown out as it is emptied. This device can also be used to advantage in gathering currants. It is claimed that one operator can gather 150 to 200 lbs. per day.

For particulars see advertisement in this issue, or write Elwood Tatum, West Branch, Iowa, for testimonials.

The Disastrous Glut

Nothing is more trying to the hard-working fruit grower, after having overcome the onslaughts of the insect world, and escaped the terrors of the late frost, the driving hail-storm or the ruinous wind, and having brought to perfection a fine crop of fruit, to find that all his care has been in vain, for the fact that all his neighbors have been equally successful and the market is glutted. To see his fruit rot under his trees or sold for next to nothing at the auction block, is a bitter pill.

The remedy, however, is not far to seek. The fruit grower must not depend on fortune and follow in the wake of the crowd. He must do as other producers, other manufacturers do—seek out new markets for himself.

It is a well-grounded fact that there is not more than enough fruit produced in Canada every year to meet our requirements if properly distributed. While the Toronto market may be overwhelmed with supplies, there are scores of towns and villages throughout Canada where a good, fair price could be had for this fruit if the buyers and sellers could be got together

There are fruit growers in Ontario who have developed along this line and have no trouble in disposing of all the fruit they can grow or buy in this manner, never touching the big centres.

PRACTICE WITH SCIENCE
ALWAYS A FULL CROP
— WHEN YOU USE —
ARNOTT'S
Complete Fertilisers
ANALYSIS GUARANTEED
Special Manures for Vegetable Growers, Fruit Growers and Florists
MANUFACTURED ONLY BY
The ARNOTT CHEMICAL CO.
AGRICULTURAL CHEMISTS AND PERTILISER EXPERTS
114 VICTORIA ST. - TORONTO
ESTABLISHED IN GREAT BRITAIN IN 1853
Write us for anything you want. Our Manager has had thirty years' world-wide experience in the Manuring of Crops for Profit.
Mention The Canadia Horticulturist when writing.

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The only Line having Turbine Ships on the St. Lawrence route

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MONTREAL to LIVERPOOL
The Turbine Steamers
VIRGINIAN and VICTORIAN
and the Twin Screw Steamers
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Every Thursday morning, calling at Quebec.

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Every Saturday morning. This service is supplied by the steamers—
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¶ All steamers of the Allan Line are specially equipped to carry perishable traffic. Refrigerators, Cool Air Chambers and Sirocco Fans are of the most modern type.

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The Canadian Horticulturist

Vol. XXIX JULY, 1906 No. 7

The New Experiment Station in the Niagara District

THE establishment of the new fruit and vegetable experiment station in the Niagara district marks an epoch in the horticultural development of Canada. It should become the most important station of its kind in the Dominion, and ultimately one of the best on the continent. The older stations have done good work, but have been handicapped by their locations and, therefore, greater things may be expected from the new one. It is located near Jordan in the centre of the best fruit district in Canada. It will be of value, not only to the Niagara district, where it is located, but it should be an important factor in the advancement of fruit matters all over the Dominion, but particularly to portions of British Columbia where conditions are closely similar to those in Southern Ontario.

The ground for the new station comprises about 90 acres, and has been given to the Ontario government by Mr. M. F. Rittenhouse, of Chicago, who was born and brought up near Jordan. While otherwise well suited to its purpose, it has two defects: it lacks the protection of the mountain, only two and a half miles away, and as a consequence, its crops are a week late in season; and, in the judgment of a representative of THE HORTICULTURIST who thoroughly examined the soil, it lacks a sufficient quantity of light soil to be ideal for experimental work with peaches and other tender fruits. This latter objection can be overcome by the purchase of additional land of that character. It is understood that Mr. Rittenhouse has given the government an option on an excellent farm of this type, across the road from the farms already donated.

Except, as already stated, that it lacks the protection of the mountain, the farm otherwise is ideally situated, being almost in the centre of the Niagara fruit district. It is located on the extreme north-east corner of the township of Clinton in the county of Lincoln. The farm faces on the line between Clinton and Louth townships, and has a shore line on Lake Ontario of about one-quarter of a mile.

It is about 12 miles from St. Catharines and 24 miles from Hamilton, or about midway between Hamilton and the Niagara river. Although, at present, somewhat difficult of access, there being no railway station within three miles, it is expected a station will be established where the railway tracks pass the farm about half a mile away. The projected electric railway line from Toronto to Niagara Falls, also, probably will pass near the farm.

It is interesting to note that the town line between Louth and Clinton, if extended across the lake, would run directly up Yonge street, Toronto. In other words, the new station will be directly across the lake from the city.

STRONG AND PROGRESSIVE

I congratulate you on the very interesting and profitable horticultural journal you are publishing in THE CANADIAN HORTICULTURIST. I prize it as highly as any periodical coming to my desk. You deserve the patronage of every progressive citizen of Canada. Few people appreciate as they ought the value of a paper that is as progressive and so strong and forceful as is THE CANADIAN HORTICULTURIST.—A. N. Brown, Middleport, N.Y.

In the vicinity of the Rittenhouse farm are a number of excellent fruit farms, worth from $150 to $250 an acre. The land for the station consists of two farms that were given to the government by Mr. Rittenhouse, in two instalments.

AREA OF THE STATION

The original offer comprised some 46 acres of land, after deducting the lots for the school and school gardens and a strip along the road required for road purposes. In the second gift, known as the Harris farm, there was originally about 50 acres, but the lake has worn away a small portion of it, causing the shore road to encroach slightly upon the original area; this, together with a strip required to widen the road to 66 feet on the east side, lessens the area to about 44 acres. Together, the two farms comprise about 90 acres.

When Mr. Rittenhouse's first offer was made, he agreed also to give the government an option on an 88-acre farm, owned by Mr. A. H. Culp, Jordan Harbor, and located just across the road from the original Rittenhouse farm. Mr. Rittenhouse had obtained an option on the farm from Mr. Culp at $150 an acre, and agreed to turn it over to the government at $100 an acre, any time within the next three years. Mr. Culp's farm is sandy in character, and is one of the best fruit farms in the locality. When the first 50 acres, given by Mr. Rittenhouse, were being examined by Mr. C. C. James, Deputy Minister of Agriculture; President Creelman of the O.A.C., and others, it was suggested by some one that it would be much more convenient to have the land for the experimental farm in a block extending from the Rittenhouse school to the lake. After Mr. Rittenhouse returned to Chicago he thought likewise. With Mr. Rittenhouse, whose generosity is unbounded, to think is to act. A few days later he visited St. Catharines and bought the Harris farm for $4,500, and presented it to the government.

CONTOUR AND SOIL

On the first farm of 46 acres, the contour of the surface is uneven. There is a variety of soils. In the south-east corner, by the school, are about two and a half acres of light sandy loam about two feet deep. This is the best soil on the farm, and it is to be regretted that there is not more of it. There is, also, a sandy loam strip of about six and a half acres running through the farm, from north-east to south-west, on the north-west side of the ravine. This strip, although sandy in character and excellent for peaches and small fruits, is rather shallow, being only about one foot deep on the average, and it rests upon hard pan. In the ravine, there are about four acres of black muck, rich bottom land, and valuable for experimental work in vegetables. West of the ravine there are one and a half acres of bush. In the north-west corner of the farm there are about four and a half acres of stiff

Mr. M. F. Rittenhouse

Whose name stands for generosity and benevolence in his native county of Lincoln.

red clay. The remainder of this farm is composed of clay loam, some 27 acres, incumbent upon a heavier subsoil about 15 inches deep.

The contour of the Harris farm of 44 acres is more level, in fact, almost all level, with an occasional knoll. On this farm there is also about four acres of red clay. The largest part of the surface, however, is clay loam, about 30 acres, but it is shallow and lies mostly on a red clay subsoil at an average depth of nine inches. There are about 10 acres of sandy loam, six acres of which is more or less in a block, and four acres scattered over the farm in sandy knolls. The light soil averages 15 inches deep, and is incumbent upon a clayey subsoil.

The character of the soil on the two farms, as examined and estimated by a representative of THE HORTICULTURIST, may be summed up as follows:

Sandy loam, in blocks	8½ acres
Sandy loam, scattered.....	10½ "
Clay loam.....	57 "
Red clay.....	8½ "
Black muck, clayey.....	4 "
Bush land.....	1½ "
	90 acres

From this it will be seen that clay loam constitutes 65 per cent. of the soil, and sandy loam a little over 20 per cent. While the farm, as a whole, is an excellent one for experimental purposes, yet the percentage of light soil for the culture of peaches, English cherries, small fruits, etc., is too small. This defect can be obviated by the purchase of the land across the road, on which Mr. Rittenhouse has given the government an option, where there is at least 75 acres of excellent light sandy soil, from one foot to three feet in depth, and lying upon a subsoil also sandy, although slightly heavier in texture. Since the acceptance by the government of these farms, for the purposes of the station, several deputations of practical fruit growers have visited the place, and have expressed themselves as being, on the whole, well satisfied with the property.

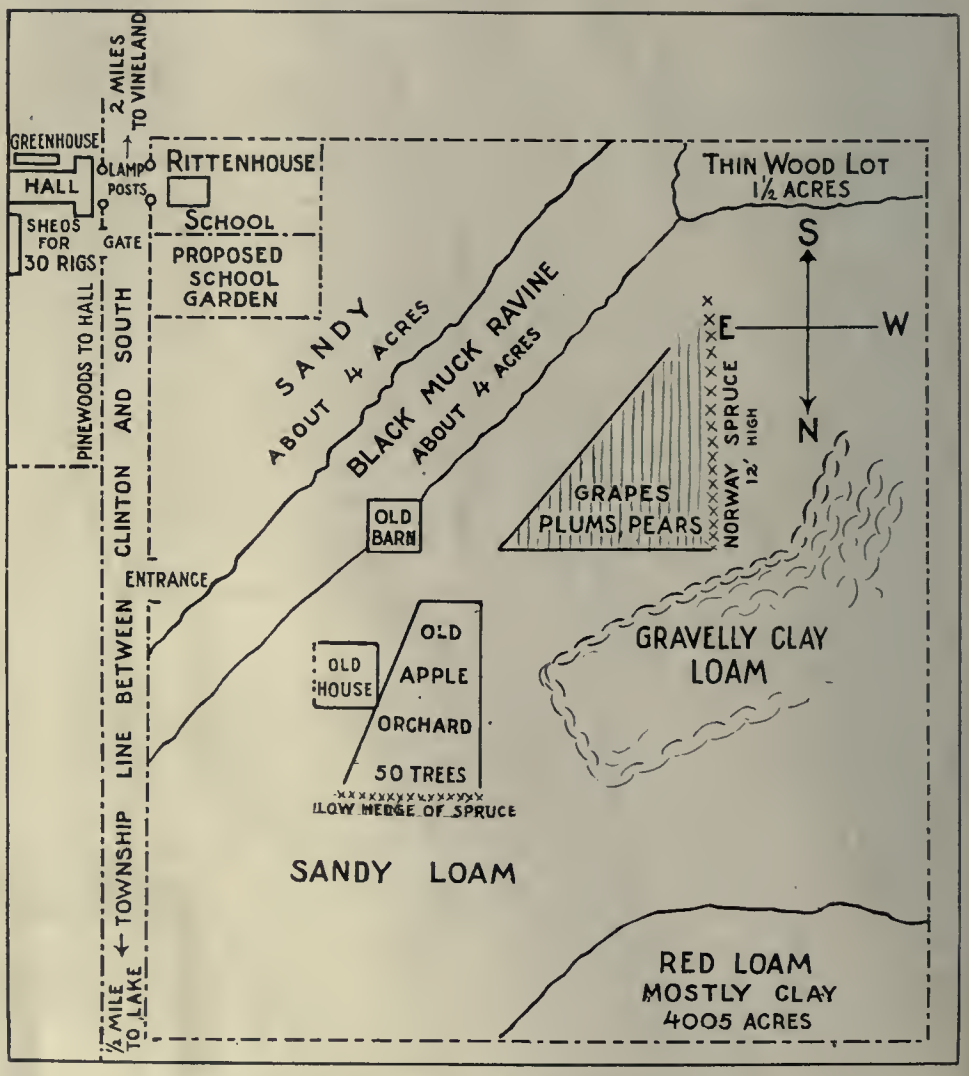
OTHER ADVANTAGES

Immediately adjoining it is the Rittenhouse school and school grounds, which are models of their kind. Across the road is "Victoria Hall," splendidly equipped and built for public meetings and entertainments. Both these handsome structures have been donated to the section by Mr. Rittenhouse. On one side of the hall are large, well-built sheds for horses and carriages. There is an excellent system of waterworks in connection. The buildings are lighted with acetylene gas. The grounds around and about the hall and schoolhouse are well laid out and planted with trees, shrubbery and flowers. Nearby is also a small public park for the use of picnic parties, and others who desire it.

Mr. Rittenhouse has agreed to give the farm the use of Victoria Hall for meetings, classes, etc. The pumping station will supply water to the farm and buildings at cost price. It is understood that Mr. Rittenhouse intends to macadamize the road on the town line from the lake to the stone road under the mountain; and probably he will lay a cement walk from the lake to the G.T.R. tracks.

PRESENT EQUIPMENT

There is now growing on these farms a few small plantations of various fruits. On the first farm that was given there are about one acre of grapes, two acres of apple orchard, one and one-half acres of pear orchard, and a couple of acres of plum trees, the latter of no value. On the Harris farm there are two acres of grapes, nine acres of apple orchard and about one acre of peach trees. The buildings now on the place



Plan of a Portion of the New Experiment Station

This diagram is a fair representation of the contour of the first farm given to the Ontario Government by Mr. M. F. Rittenhouse, of Chicago, for an experiment station in the Niagara district. It was drawn before THE HORTICULTURIST examined the premises as reported in this issue. We believe that a close examination will show that the area marked sandy loam in the diagram, is largely clay loam instead. The area of red clay is 4 or 5 acres, not 4005 acres, and in the left upper corner the word "South" should be "Louth."

consist of two houses and two barns. They are old and of little value.

All that will be done this year will be to put the farm in shape for experimental work. This will require a lot of cleaning, fencing, and draining. The farm is run down, and careful work will have to be done to put it in order.

This year it is proposed to put a good fence around the entire farm. The farm will be cleaned up, old and worthless trees will be removed, some summer fallowing will be done. Probably a man from the Ontario Agricultural College will be put in charge for this summer. Next year experimental work will be taken up and planting will be commenced.

APPOINTMENT OF THE DIRECTOR

The government has stated that it intends to take plenty of time to select a competent man for the position of director. Not until such a man is found will the appointment be made. The future of the undertaking will rest largely with the man who is appointed to superintend the work. It is not likely that any class rooms will be built on the farm just now.

The farm will be attached to the O. A. College, Guelph, and the director made an additional professor of horticulture. Probably the specialists in horticulture at Guelph will be required to take considerable practical training on this farm. In time, perhaps a separate institution for students of horticulture will be established on the farm. Adjoining the farm, as already stated, is the Rittenhouse school. This school is splendidly equipped with a library, museum and other accessories necessary for work in natural science and nature study, and has beautiful grounds and a school garden. This itself might be developed into a school of horticulture. Public school teachers could take courses in nature study right on the farm as well as at Guelph.

VEGETABLE EXPERIMENTS

Experiments in growing vegetables will likely be given equal importance with fruit. At Guelph the work with hardy vegetables, and with vegetables under glass will be carried on; while at the new place, investigations will be conducted in the growing of early market vegetables under glass and in vegetables for canning.

Within three and a half miles of the farm is being erected E. D. Smith's canning factory, a big plant, which will tend to stimulate the work of growing fruits and vegetables for canning purposes. This factory, in conjunction with the farm, will greatly increase the value of farms in the neighborhood.

While primarily the farm is to benefit the Niagara district, other sections of Ontario are alive to the fact that the province as a whole will have to pay for the equipment and for keeping it up, and not the Niagara district alone. For this reason it will be so managed as to be of benefit to the entire province, and necessarily to the whole Dominion.

Ontario Fruit Grower's Opinion of British Columbia

Robert Thompson, St. Catharines, Ont.

DURING a recent trip to British Columbia in the interests of farmers' institute meetings in the fruit districts, I had an excellent chance to size up the situation and compare the conditions of the fruit grower of that western province with those of Ontario growers, more particularly those in the Niagara district. In some sections the possibilities in the fruit business are exceedingly great, but there is a large market in the prairie provinces which the production of the immediate future in British Columbia orchards cannot hope to fill.

When I arrived at Victoria on March 5, I found the peach and apricot trees in bloom, and the pears well out. One week later they had four degrees of frost that caused considerable damage to early fruits. On Vancouver Island the fruit grower is sadly handicapped, owing to the long distance from market and a lack of enough growers in one locality to make up car lots. As soon as they form cooperative associations and make up car lots they will be able to ship to some of the northern coast markets.

In the lower country and along the Fraser delta they have to do a great deal of spraying, and fruit growing is not increasing very rapidly. In the upper country valleys, however, you hear fruit talked of everywhere. The fruit industry bids fair to be the largest cultivated crop in the province. Excursions are run in from Winnipeg to the Okanagan valley, and land is being sold in many places at $40 to $200 an acre unimproved. In many places the land is sold in 10 and 20 acre lots. The greatest boom is from Enderby to Vernon, and down the shores of the Okanagan lake to Peachland and Summerland.

Around Salmon Arm there appears to be a large area suitable for apples for sale at reasonable prices. In the Kootenays there are some places where it is claimed that apples and berries will do better than in the Okanagan. The Kamloops district is too dry without irrigation, and I do not look on this section as likely to be a heavy fruit producing section. From 800,000 to 1,000,000 trees were planted last spring, but as a conservative estimate not one-fourth of them will ever produce fruit. Many unsuitable varieties are purchased. Peaches and Japan plums are planted where the frost will kill the bloom. In British Columbia, trees should be planted not over one year old, but the people persist in buying trees two or three years old. Others plant them in wheat fields and in meadows, where they stand for one, two or even three years, and have made little, if any, headway.

Nevertheless, Ontario fruit growers need not be jealous of their western brethren, as the growth of the Territories will absorb all the fruit produced by them for many years. The apple trees bear very young; in fact, too young, as it checks their growth if the orchard is not well cared for. In many sections the blight is very bad on the pear trees. Our fruit growers think that they have a hard time fighting insect pests, and suppose that our western friends have no troubles, but I found it was only the wideawake, active grower, who cultivated, pruned and sprayed, who was making a success of his business. The climate is ideal, and possibly in some sections too dry in summer, but where they can get a sufficient water supply irrigation takes the place of the rain.

The packing is nearly all done after the western states style in boxes. Grapes will never be a great success, owing to the cool nights. The people are whole-souled, generous and hospitable, very ready to give information, and as ready to learn and adopt anything that they consider may benefit them in any way. British Columbia is sharing in the boom of the Northwest, as many of the older settlers in the prairie provinces are selling out and moving west. Many English and Scotch settlers are coming in and settling on fruit lands.

After seeing the country and the conditions under which the fruit grower has to produce the fruit in the west, and comparing our lot in the Niagara district with theirs, I have no hesitation in saying that we have as good a chance to succeed here. We have no more drawbacks than our western friends, and we have a larger and more varied market. Canada is a great country. We think we have the Garden of Eden in our section, and our western friends are also justified in thinking that they have it in a dozen places in their many valleys.

Summer Treatment of Orchards

ORCHARDISTS in the leading fruit sections are adopting clean cultivation and cover crops in late summer more commonly as the years go by. There are a few fruit growers who do not consider the benefits derived from such system sufficient to cause them to go to the extra labor and expense, and so prefer to leave the fruiting land in grass. The experiences of many of the most successful growers and the results of experiments at colleges and stations, however, have shown that in most cases, for successive crops of good fruit, it is advisable to practise clean cultivation.

The Work that Generally Results in Large Crops

View of a quarter mile row of Gravenstein and King apples in Hillcrest Orchards, Kentville, N.S., showing reversible extension disc harrow, sulky gang plow, and two low wagons with 100-gallon hogsheads used for spraying.

If cultivation is kept up until late in the season, tree growth continues, and the wood is not ripened when heavy frosts come. The result is that many trees are ruined. In recent years orchardists have adopted the planting of cover crops to overcome this feature. Many kinds can be used to advantage, but it has been learned that the locality and the climatic conditions regulate to a certain extent the cover crop that will give best results.

The general benefits are numerous. In most cases some of the leguminous crops, such as clovers or vetches, are used, because considerable nitrogen is incorporated with the soil. In any case, humus is added and the plant food rendered more available. Rains and snows are held until they have time to soak into the ground; and, in spring, the evaporation through the leaves causes the land to dry and be in fit condition for cultivation earlier than in orchards where no crop is grown.

The experiences of some of Ontario's most successful orchardists have been obtained by THE HORTICULTURIST.

"My orchard," wrote Mr. F. G. Stewart, of Homer, "is so very stony that I cannot cultivate it as I would wish. I keep it in sod, cut the crop, let it lie on the land and feed it one year with ashes, 50 to 60 bushels an acre, and the next year with tankage 400 to 500 lbs. an acre. Prior to 1905 I had eight successive crops. Last year I had but very few.

"If I could cultivate the orchard, I should put in a cover crop of mammoth clover. I intend to do this with my plum and cherry orchards as soon as the crop is picked. I have tried rape, but although it makes plenty of humus, I do not find it adds enough nitrogen. Clover does both."

"In the St. Lawrence valley, east of Kingston, wrote Mr. Harold Jones, of Maitland, "my experience has been a clean cultivation during the summer, with a cover crop sown as late as August 1 or 15, produces a late succulent growth of green wood, not sufficiently ripened to withstand our winter. Taking these conditions into consideration, I should advise that clean cultivation practised up to and not later than July 1, and then sowing thickly with red clover, say at the rate of 10 or 12 lbs. to the acre, gives our trees every chance for rapid and vigorous growth in the early summer, as well as rapidly developed fruit. Then a heavy seeding of clover has a tendency to check growth sufficiently to have the twigs well-ripened before winter sets in, besides giving us a clean sod for the fruit that falls.

"In heavy, strong soils, where wood growth is very vigorous at the expense of fruit buds, I have found it advisable to let the orchard remain in clover sod without cultivation for one or even two years. This treatment gives a very noticeable increase in blossom buds.

"Among the cover crops used generally throughout Ontario, the common red clover is found the most desirable for the St. Lawrence valley. Crimson clover is not hardy and will very seldom or never pass the winter alive. Soy beans, or Soja beans, and vetches are valuable in their fertilizing qualities, but are difficult to move among, and wet in the mornings for the pickers.

"The most serious losses from winter killing during the past four years have been in orchards under clean cultivation, and the fewest losses in orchards in sod. But, we must bear in mind the value of our orchards under the several treatments from a commercial standpoint, and it is up to us, as fruit growers, to bring our orchards into the highest state of fertility and productiveness, keeping in mind the importance of getting our wood growth thoroughly ripened before winter sets in."

PRIZE-WINNING FRUIT ON SOD

That some orchardists produce excellent fruit without cultivating is shown by the record made by Mr. C. W. Challand, of Marbourg. Last fall, at Toronto, he had seven entries and carried away five first prizes. In 1904, three first prizes were awarded for three entries. Last fall his sales amounted to $675, while scarcely another grower in the neighborhood had saleable fruit.

In a recent letter to THE HORTICULTURIST, Mr. Challand wrote: "The orchard has been in sod for 14 years, pastured by sheep and divided into parts in order to give fresh pasture. It is eaten off much more evenly than when the whole run is given at once. Last spring I plowed the orchard because so much manure had been added around the trees that the grass grew so long and so wiry that the sheep would not eat it. After about two years I shall seed it down again. During July, I intend sowing rye, and it will be plowed under next spring. The soil is clay loam.

"For the last eight years half the trees each year had a dressing of barnyard manure at the rate of about one load to four trees, according to size of trees, spread out nearly as far as the branches reach. The last two years no ashes have been used. During the four years previous about 1,200 bushels of ashes were used at the rate of one to two bushels per tree, according to size of tree, scattered around about as far out as the top reaches.

"In 1896 I purchased a sprayer and

used the Bordeaux mixture with ¼ lb. Paris green added to each barrel. The last two years I have used a mixture I like much better. The mixture I use now for one barrel is: Blue vitriol, four pounds; fresh lime, 16 lbs.; Paris green, ½ lb.; white arsenic, ⅛ lb. The white arsenic is prepared by boiling one pound white arsenic with two pounds of sal soda for 45 minutes in an iron kettle with two gallons of soft water. Apply with a good sprayer that has a good agitator and don't be afraid that your barrel will be empty too soon for your pocket book.

Improving a Child's Playground

THE views here shown were taken by Mr. W. A. Code, of 327 Waverley St., Ottawa, showing his yard in August of last year, and while Mr. Code primarily intended the photographs to display his handiwork, as evidenced by the little cabinet he had just completed for his daughter of five, he has reproduced them with a view of showing, in a small way, what a little trouble will accomplish toward improving unattractive surroundings.

A Screen of Vines and Perennials

Having inherited a slight taste for gardening, Mr. Code, when first he took up his residence at his present address, some seven years ago, attempted growing vegetables of different kinds in a small plot in the rear of his premises, but the soil, not being good, and his little daughter requiring a play-ground, he levelled off the whole plot—an L-shaped space about 45 feet long by 33 feet wide at the rear half—and sowed grass seed thereon. His desire, however, for some sort of garden was too strong, and accordingly a narrow strip of one and a half to two and a half feet was encroached upon all the way round the yard, and this plot prepared with a cart load or two of sand and loam, which was mixed with the original soil.

Morning glory, wild cucumber and scarlet runner vines were soon growing up the side of a neighbor's back kitchen, which on hot afternoons had lent its quota, for therein, as may be seen, flourished golden-glow, geraniums and a variety of other plants not easily discernible. Having put so little effort into the undertaking, Mr. Code naturally felt amply repaid and encouraged over the result. The same returns might be obtained by others of our readers as a reward for the expenditure of a little energy and a few cents. The influence such pleasant surroundings have on the children is an important consideration.

A Child's Playground Beautified

Destroying Cut Worms

T. D. Jarvis, B.S.A., Guelph

What is the best remedy for the cut worm on tomatoes and peppers? The worms assume the color of the soil in which they work, and burrow themselves under the plants they cut off.—W. C., Burlington.

The larvæ of cut worms are about 1¼ inches long, smooth and naked, presenting a greasy appearance. The colors are generally some shade of green, grey, brown or black. Most of them are night feeders. The natural home of the cut worm is on sod land, and it is well to avoid planting tomatoes and peppers and other crops specially liable to their attacks after grass.

Poisoned baits, such as small bunches of clover or cabbage leaves dipped in Paris green solution (one pound Paris green to 100 gallons of water) and placed near the attacked plants, may be used to advantage. The cut worms feed on these and are destroyed. Poisoned bran, sweetened with a little molasses and made into moist balls the size of plums, has given excellent results.

A Montreal Vine-Clad Home

The home of Mr. J. Henderson, superintendent of Mount Royal Park, Montreal, is shown in these two illustrations. The grounds in the foreground

A Beautiful Vine-Clad Home

are beautifully planned and planted. The grand old vine on the residence is the common Virginia creeper, *Ampelopsis quinquefolia*. It is at least 30 years old, and climbs on wires fastened to the brick walls. A house is seldom beautiful without climbers to add a touch of color and to relieve the bareness of the walls. The old-fashioned Virginia creeper is one of the most popular for the purpose. Luxuriant

A Virginia Creeper in Montreal

in its cool, dark green growth in summer, and dying off in resplendent hues in autumn, it rightly deserves its popularity.

The Virginia creeper is one of the hardiest of hardy climbers. It is easily propagated and easily grown. It is best for the amateur to buy the plants from some reliable nurseryman, as they are not expensive, and a year's time will be saved. The vine is increased by cuttings of moderately ripened shoots, which should be taken in late fall and stored until spring, or where facilities are available, the cuttings may be started in a house or in a cold frame. By the following autumn these cuttings, under ordinary treatment, will make good plants.

Chinese Lilies

Some Chinese lily bulbs that I put in water grew well but failed to produce bloom. What might have been the cause?—C.B., Ottawa.

This might be due to two causes. It may be that the bulbs used were not matured, or it might be that at the time the flower was starting to come the bulb had not sufficient nourishment to develop its florets. The Chinese select three grades of bulbs, first, second and third. The thirds are very inferior, and very seldom flower. Seconds will flower very well. Firsts will give satisfaction to any person.

I do not think it is any fault on the part of the grower with the exception that a little ammonia in the water might have helped the bulb to develop its florets. It is more than likely that the bulb was such a small size, it had not sufficient nourishment to develop the perfect plant. Be sure to have a large bulb another time, and I think you will have no difficulty in securing flowers.—Herman Simmers.

Wild Flowers for the Hardy Herbaceous Border

A. Alexander, Hamilton, Ont.

IN the April number of THE HORTICULTURIST, a few of the earlier plants native to our woods and fields were named as having been satisfactory additions to the hardy garden. In this short article we will name a few more desirable subjects for the same use.

The first we would call attention to is Phlox divaricata. It is found growing plentifully in many of our woods and shady places. It is a very attractive plant of a fine light lilac color, the loosely flowered panicles growing to a height of nine inches or a foot. It flowers for four or five weeks during May and June. A partial shade is preferred, though I have had it thrive in the open border, among its sun-hardened new acquaintances.

Geranium maculatum is another native that always gives satisfaction. After being planted it will increase in size and profuseness of bloom from year to year. My specimen has been in the same spot for at least 10 years, and has been blooming all through June and was conspicuous during part of May. The flowers are light purple.

Smilacina racemosa, False Solomon's Seal, is quite an acquisition to any garden. It is found growing in rich woods. With its very graceful, bending stems and its terminal plume of creamy white flowers, it is a thing of beauty. It is also fragrant and the flower is succeeded by a cluster of pale red berries, spotted with purple. Why it should be called *false* Solomon's Seal I am at a loss to know, unless it be that it is very often found in close companionship with Solomon's Seal. It surely has originality enough to have a name to itself.

There is a little flower, a favorite of mine, Tiarella cordifolia, the foam flower, or False Mitrewort, which I intended to have referred to in my last talk of the wild flowers, is a beautiful little gem and fragrant. The leaves are very persistent, and are often richly colored in the fall.

Those who have room should have some members of the aristocratic orchid family, especially the Cypripediums, or Ladies' Slippers. They are still to be found in many shady woods and dells. The easiest of cultivation are Cypripedium pubescens and C. spectabile. I have had the former of the two for many years. It is yellow and responds to good treatment in the shape of good soil and favorable locality.

The only other plant I would refer to is Actaea spicata rubra (Baneberry). It has a spike of white flowers early in the season. These are succeeded by clusters of cherry-red berries, which are very beautiful.

Actaea Spicata, Baneberry

False Solomon's Seal

Summer Treatment of Plants for Winter Beauty

TO grow plants and flowers successfully during the balmy days of summer is easy for the most amateur enthusiast who is willing to devote a little time and to exercise common sense in the treatment accorded. Success during the dull cold days of changeable weather common in Canada during the winter months is, however, a more difficult proposition. Too many who have beautiful gardens in summer forget that plants cannot maintain their cheering beauty for 12 months of the year unless they are given special treatment, care and attention. Professional florists, with every facility for controlling heat and moisture conditions, do not, as a rule, attempt to induce bloom continuously. How, then, can the amateur with ordinary house temperatures and conditions such as they are in the average living room hope to do so? The plants must be prevented from producing bloom in summer if they are wanted for brightening up the windows of the home during the dreary days of winter. If this is done and care taken to maintain a temperature sufficiently high and to give the proper amount of water, plants put in fresh potting soil will repay the owner with a liberal supply of bloom in the winter season.

There are many plants that can be used to advantage. Of the flowering plants, geraniums are perhaps most frequently used. Begonias and fuschias and the ever-flowering member of the balsam family, Impatiens Sultani, too, are common. Although these produce bloom of better quality in the warmer season, they are worth having for window culture in winter. Many horticulturists, however, prefer the non-flowering plants such as ferns, palms, rubber plants, etc., for decorating the living room in the cold months.

THE CANADIAN HORTICULTURIST recently obtained the opinions of successful growers, who have had lengthy experience, regarding the best treatment of the different plants during summer and fall to have a brilliant display of foliage or bloom in winter.

POT DURING JULY

"Where there is no gas and no coal stoves," said Mr. Thos. Manton, of Eglinton, "lovely window plants can be had by potting geraniums early in the summer n four or six inch pots, and plunging them outside until fall. The plants make a stout and rugged growth, and if the flower buds are nipped off during the summer an abundance of bloom will be produced during the dull months of winter, provided the air is pure and the temperature not lower than 50 degrees. Plants are like persons. If they are left outside in the fresh air, where they get plenty of sun, they become strong and able to stand the hardships of winter.

"Boston ferns, too, should be plunged outside in pots the same as geraniums. If given plenty of water they grow rapidly, and although they may be hard lookers in the fall, they go into the house healthy and strong, and present an attractive appearance all winter.

"The rubber plant is an old favorite. It, too, should be plunged outside. In a healthy plant the roots are located chiefly around the edge of the receptacle. When plunged these roots do not become scorched, and the plant becomes

Geranium Maculatum

strong and robust and in fit condition to endure the conditions to which it must be subjected during the winter months.

"Winter flowering begonias are much sought after by flower lovers. By plunging the pots outside during the warm months, a desirable short-jointed growth results, and the plants are ready for bloom almost immediately after being taken in. Begonia manicata aurea is one of the most beautiful plants for winter culture. Pesides, there are the desirable varieties: Begonia incarnata, Begonia fuchsioides, Begonia multiflora, and many others."

"Ferns are the most satisfactory plants for window decoration during winter in the private house," said Mr. A. Houston, head gardener at the Parliament Buildings, Toronto. "Tulips and hyacinths, however, give the best returns for the labor that is required in attending to them. For this reason many amateur flower growers prefer them to any other plant for window decoration during the winter months. Palms are excellent house plants. The members of the Kentia family are most desirable. Care must be taken, however, not to give them too much water. The average amateur is too lavish in supplying water to his window plants. In many cases a saucer is kept underneath and water kept in the saucer. No plant can be expected to thrive under such conditions.

WINTER TREATMENT

"It is a difficult matter to have continual success in inducing plants to bloom during the winter months in the temperatures that are found in ordinary living rooms. It is too much of a strain on the vitality of the plants. In greenhouses the temperature can be kept more uniform and better returns repay the grower for his labors. The Nephrolepsis ferns can be made to present an attractive appearance, but they do not make the growth that is common under greenhouse cultivation. With window conditions, in the average dwelling, the plants can be kept alive over winter, but usually the results are not very encouraging.

"Among the bulbous plants, for forcing in winter, hyacinths are the most satisfactory. Tulips also are good. The former frequently do fairly well in glasses of water, but the results are much better when soil is used. The best plan is to purchase the bulbs in October, and bury them in the cellar until February. Some of the tulips may be taken up in January. In some instances the bulbs are buried in ashes outside with success. The time of taking them up depends on the amount of roots in the pots. While the bulbs are lying dormant roots develop. They are not injured if the temperature goes a few degrees below freezing. When uncovered they must be kept for a few days where the atmosphere is about the freezing point. The temperature can be raised gradually to 45 or 50 degrees, under which conditions they do best.

GERANIUMS

"Geraniums are common plants for window culture. To induce bloom during the dull months of winter it is necessary to keep the flowering buds pinched off during the summer. The pots should be plunged outside about June, and the plants left there until September, at which time they should be shifted to larger pots, in which they can be left until spring. Flossoms will come in a very short time, but they will not be so good as those that appear in the summer. The addition of liquid manure helps to make the bloom of better qualtiy.

"Impatiens Sultani is a marvel for bloom. If treated much the same as recommended for geraniums, a pleas-

ing effect will be produced throughout the winter. It is very difficult to induce fuschias to bloom copiously during the cold months.

"Most house plants should be plunged outside. The objection to setting them out of the pots is that in taking them up again in the fall the roots are mutilated. Under outdoor conditions the moisture is more uniform. A handful of cinders should be placed underneath each pot to ensure perfect drainage. In September the pots should be lifted. If they can be put in a cold frame and left there until October, better results will be had in winter. Care must be taken not to have too much moisture around the plants. Never allow water to lie at the roots. It is much better to have the plants too dry than too wet."

In a recent interview with Mr. O. Grainger, of Deer Park, he stated that geraniums are the staple plant for window decoration in private houses during winter. "For best results," said Mr. Grainger, "new soil must be given every year. The growth made during the winter months exhausts the earth in the pots. In the spring the best plan is to take the plants out of the pots and set them in the garden. Stout, strong growth is made during the summer, and before frosts come in the fall the plants can be taken up, put in fresh potting soil, and set in a sunny window. If the plants are cut back and the shoots taken off, young growth is induced, and in a short time flower buds appear.

"Begonias, too, are excellent for winter window decorations. If kept outside all summer the same as geraniums, they will do well throughout the winter. The tuberous-rooted specimens cannot be treated in this way because they die down in the fall and must have a rest until spring. Rex begonias are very desirable for winter use, while the tuberous begonias should be cultivated for spring decoration in the spring.

"Fuschias, if bedded outside during summer, and put into pots when taken up in the fall, are very desirable. They immediately shed their leaves, but if carefully attended to and kept moist new growth soon appears, and an abundance of blossoms burst open late in the winter or early spring.

"Impatiens Sultani is almost a perpetual bloomer, and should be found in every collection of window plants. If well attended to and given suitable soil, this plant will present a pleasing appearance all through the winter.

"Petunias are of little value for the window collection during winter. With most specimens new plants have to be raised each spring, and by fall they have become too large. Some of the double varieties can be propagated from young shoots, and are used in windows for winter decoration.

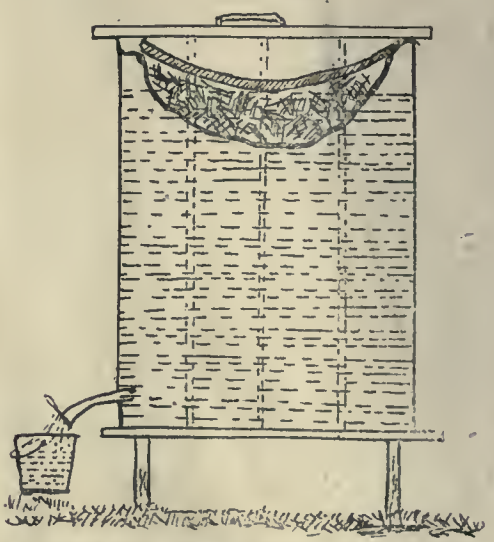
"There are a few plants that can be used to advantage in winter by sowing seed late in the summer or early in the fall. Cinerarias, if sown in the latter part of July or early in August, will come into bloom about March 1. The seed should be placed in pans, and as soon as the seedlings are large enough to handle they should be transplanted into flats. In a short time they can be placed in small pots. After a few weeks, a final shift can be made to pots large enough for them to flower in. Calceolarias are not usually a success under winter conditions. They require high temperature. If the seed is sown in August and favorable conditions are maintained throughout the winter, these plants make a brilliant display in May. As soon as the warm summer weather comes they make vigorous growth and give lots of bloom."

Hints for City Gardens During July

WATER, water, water is the cry from the garden during the hot days of July, and your success with your plants will depend on how you answer it. Every garden makes a special demand upon some method of watering or irrigation. There are various ways of watering the garden, each best adapted to certain conditions under which the gardener works. Those favored with a city water supply are to be envied.

It is better to give plenty of water every few days, than a little each day. The surface is kept moist by the latter method, and the roots rise for the moisture, and thus are easily injured by the heat of the following day by being near the surface. Enough water should be given to wash the leaves and sink deep. The best time for amateurs to water is at night. Then the moisture has a chance to do its best work before evaporation begins under the hot sun the next day.

Scarcely any amateur gardener will go to the trouble and bother of preparing a supply of liquid manure at frequent intervals. This may be done easily and simply, in the following manner: Hunt up any old paint or oil barrel. Half a hogshead will do if available, or even a large packing case, although the barrel is better, as it has no corners and is more watertight. Suspend a half empty sack in the top of barrel, as shown in the illustration, fastening the sacking to an old iron hoop, caught over the top edge of the barrel, or to sticks placed across the top Fill this sack with fresh cow manure



A Simple Method of Mixing Your Liquid Fertilizer

and suspend it in the barrel as shown. Nearly fill the barrel with water, put the cover on, and in a short time the liquid will be ready for use.

A spigot, fastened at the bottom of barrel, will be found a handy means to draw off the liquid for use in the garden. Several refillings of the barrel with water may be made before the sack of manure has to be refilled. By suspending the manure in the sack, no sediment will form at the spigot to stop the drawing off of the water for use.

One of the most expensive habits of most gardeners is the wasting of time between crops. Many think as soon as September comes, that the garden is about over for the year. Waste no days in the garden. There are at least 11 vegetables that can be planted in July: beans, early peas, corn, beets, carrots, cucumbers, lettuce, radishes, okra, cress, and white French turnip. As fast as crops mature, put in something else. Don't let your garden run out the first of September or October. Use your land for "all it's worth" till the cold weather won't let you use it any more.

Don't supply your men with poor tools and expect them to get the best crops in the neighborhood. You can get more work out of a man and better results by giving him a good wheel hoe, than letting him shift for any old thing to hoe with.

Plenty of manure water for young celery plants will amply repay for trouble in maintaining a supply constantly on hand. It is hard to overfeed or over-water celery plants.

Don't let the tomato vines run glori-

ously to vines. Cut out the many spindly, weak shoots, which only take the strength and vitality of the plant from the larger branches. Get larger and better tomatoes by letting in some of God's sunlight and daylight.

Draw up the earth carefully around the leeks to blanch them well. You will get enough more for your crop to pay for the little extra labor. Onions should not be hilled up as they naturally grow on the surface of the ground.

If you have a vacant spot in the garden in some corner, where nothing has been planted, utilize it by setting out late cabbages in July. Should the midsummer bring with it the pretty little white butterflies, whose young are so destructive to your cabbage, they can be turned out of your domain by dusting with hellebore or some special preparation used for such purposes.

When the lima beans have reached the limit of their supports, they should be topped off, to throw their strength into the pod and beans proper.

No amount of care will produce good, tender vegetables, should they once get a check in their growth. Hot weather is bound to check them unless they are given plenty of water. A good way to look after this is to keep in the ground the moisture already in it. It is not pleasant to hoe the garden in the scalding sunshine, with the thermometer at 90 deg. or more. Get a little wheel hoe and go out in the early morning or after sunset, and note the difference in the garden and yourself as well.

An Inexpensive Shade for Your Lettuce Plants During July

Black seeded varieties of lettuce are much the best for hot weather. At the hottest period of summer, the lettuce will become bitter and run to seed. Screen the lettuce with an inexpensive home-made affair like the one shown in the illustration. Cheesecloth is used to stretch over the frame, made but roughly out of available sticks around every one's place, and such a screen, stretched over the lettuce bed sufficiently far above the plants to allow a circulation of air, will help out wonderfully. The summer crop might be planted in that shady corner you were wondering what you would use for earlier in the season.

Keep surface soil well loosened around the maturing beets, or their growth will be checked. Keep them well thinned.

The runners of the squash and melon vines are making growth while the sun shines, and are using up all the good moisture for themselves, while the fruits are thirsting for a drink. Cut off these beggars and throw the growth into the melons and squashes. Give the vines plenty of manure water, which will satisfy their hunger as well as their thirst at the same time. Pinch out the ends of the main vines, and stop the lateral shoots, making your fruit sweeter, and of better flavor as the sun gets at it, and who or what is not better for the sunshine?

Making the Most from the Market Garden

VEGETABLE growers in the vicinity of Toronto are forced to make the most out of their land. Property is valuable and taxes are high; market gardeners, therefore, cannot be satisfied with obtaining one crop in a season. Everything possible has to be done to make the land yield returns throughout the growing season.

Various ways are tried by different growers with the object of obtaining maximum profits. A representative of THE CANADIAN HORTICULTURIST, who visited Mr. Geo. Syme, Jr., of Carleton West, president of the Toronto branch of the Vegetable Growers' Association, was much interested in the methods adopted on the Syme farm, which comprises about 30 acres. The farm is in excellent condition. Part of it comprises some flat, low land, of black, loamy soil, and the remainder is higher land and more of a sandy loam. This gives an excellent chance to grow the various garden crops, and have them coming in at different seasons.

The lower part of the farm is specially adapted to celery growing. On account of its location it is naturally inclined to be wet, but a thorough system of drainage, with tile drains about 15 yards apart, has remedied that defect. Six inch sewer pipes of second grade are used in the main drains, while in some of the laterals ordinary two inch tile are used. The small pipes, however, do not give entire satisfaction as they frequently become plugged.

"Authorities," said Mr. Syme, "claim that a rotation of crops should be practised. On part of our farm, celery has been grown every year for 30 years, and last year's crop has been as good as any that has been grown there. In fact, the celery seems to be better every year. Every year we put on as much manure as can be plowed under. Within certain limits vegetable growing pays in proportion to the amount of manure added to the soil. Some growers say that black loam adapted to celery growing requires no manure, but this is not so. In the spring, as soon as the ground can be worked, it is plowed and harrowed. Then a coat of fertilizer is used, and the harrow again run over it. The young plants are then put in, and as soon as they become established, more fertilizer is scattered between the double rows. We use Bradley's Fertilizer at the rate of about 800 to 1,000 pounds per acre. In applying it, however, special care must be taken not to let any of it touch the leaves of the plants as it is very strong and burns them.

"In setting the early crop of celery, I prefer planting in double rows, because more can be grown to the acre, and the bleaching can be done more easily. The inside of the rows is bleached by their own shade, and by placing boards on either side, the bleaching can be completed in 10 to 14 days. If the ground is not rich, however, the plants should be set in single rows. The first planting is done about May 10, and frequent plantings are made until July 1. Then, for a very late crop, more is put in as late as August in soil from which potatoes have been taken. Before planting it is wise to pack the soil firmly where the plants are to be placed.

Each plant is planted by hand, the roots being placed over the ball of the thumb and pressed under the surface of the soil. In this way the work can be done very quickly. One man can easily plant over 1,000 in an hour. (One of Mr. Syme's men was planting while the representative of THE HORTICULTURIST was there. He took out his watch and timed the planter without his knowing it. Twenty-seven plants were put in in one minute.)

"The double rows are placed three and a half to four feet apart and a space of six inches left between the rows with the plants 12 inches apart, those of one row being opposite the spaces of the other. Careful cultivation is necessary, and it is essential that the weeds be kept down. In the early part of the season, shallow horse

cultivation can be practised, but the roots of celery plants forage widely, and after about two months horse cultivation must be discarded. After that time it is not safe to hoe deeply. It is much better to pull the weeds by hand. Where the ground is not comparatively clean, single rows should be planted.

"Within the past few years we have changed our methods of planting celery. At one time it was thought that a good crop could not be produced unless a trench were dug and three or four inches of manure placed in the bottom of it, soil put on the top and the plants set in this soil. It was found, however, that when the roots reached the manure they went no farther. The result was that the root system was partially destroyed, and soon the top became blighted as well.

"The place of planting late celery is regulated by the nature of the season. If there has been little rain single rows are planted between the double rows that were put in for an early crop, because celery would not thrive on higher land of a more sandy nature in such a season. If, however, there has been plenty of rain, the late crop is planted on the high ground from which an early crop of potatoes has been taken. It can be put in as late as August. Single rows are preferred because it must be placed by banking with clay. If an attempt were made to bleach double rows by boards late in the season, the celery would be seriously damaged by frost. In fact, more injury would result to celery with boards around it than if it were standing naked. I have left the crop out as late as November 15.

BLEACHING CELERY

"In bleaching celery care must be taken not to have more of the early crop boarded in than will be sold within two weeks. It is better to have it too green when marketed than to have it overbleached. The difference is so great that some customers think that there is a difference in the soil. The main essential, however, is to regulate the bleaching to suit the sales. Late celery should never be put on low, wet ground, because the fall rains cause the ground to become wet and cold, and the roots are injured, making the plants susceptible to blight.

"Many schemes are adopted to avoid wasting ground or let it go idle. Lettuce can be planted about May 24, and in the latter part of June single rows of celery can be placed between these. The lettuce will be done in time to allow banking up the celery. Early cabbage can be set out as soon as the ground is fit for cultivation, and Brussels' sprouts set between these about the middle of June. When the ground is kept busy the weeds are more easily kept in check. Onion sets are put in early in the spring in rows about 15 inches apart. Then about June 15, cauliflowers are planted in every second space. Beets, carrots, onions, etc., are planted in rows 14 or 15 inches apart. Silver skin onions are planted extensively because there is no difficulty in cleaning them.

"An early crop of peas can be produced by sowing the peas between onions from California sets. These sets are planted about the last of August, or as soon as the onions of the previous season have ripened their sets sufficiently for use. They are planted in rows about three feet apart and kept well cultivated until late fall. As soon as the snow has gone in the spring they are ready for market. A few are kept to produce sets for planting the following August. Early in the spring the scuffler is run between these rows and peas planted there. Knott's Excelsior is the most satisfactory for early production. There are dwarf growers that are well podded with peas of good quality. This year the first was taken to market on June 19 and brought $2 a bushel.

CAULIFLOWERS

"A sandy loam suits cauliflowers well, but the early crop cannot be grown successfully in such soil on account of the maggot. When the plants are set in stiffer soil the damage due to this insect is very slight, while if the plants were put in a sandy loam almost all of them would be destroyed. About July 1 the pest ceases to work, and very few plants set out after that date are lost. With the early crop all that can be done is to set new plants in places where the maggots have played havoc. In this way a full stand is had by early July. This suits for marketing, as the crop does not all come in at once, but the grower hates to have to plant a second time.

"The green cabbage worm sometimes makes inroads on the cabbage and cauliflower patches, but it is easily kept in check either by hellebore or Paris green. The best plan is to mix these ingredients with land plaster or lime and dust a little in the heart of each plant. The hellebore is most satisfactory because it destroys every insect it touches, while the Paris green must be eaten before the pests are killed."

TRANSPLANTING POTATOES

An experiment has been tried in transplanting potatoes from the greenhouse. The tops are large and healthy, but the tubers are not as large as those in a patch planted early in the ordinary way. Transplanting was done about May 10, while the field planting was done as soon as the ground could be worked.

The potato bugs are kept down by frequent sprayings of Paris green. Mr. Syme claims that it is not essential to have force supplied by means of a pump. The plan he has adopted is to place a barrel in a high dump cart. Sufficient pressure is supplied by siphon system to spray the potatoes. Lines of hose extend from the bottom of the barrel far enough to reach the potato vines. On the end of each hose is a rosette to form a spray. All that is necessary is to start the flow, and it continues as long as the rosette is not raised above the level of the mixture in the barrel. Spraying can be done rapidly. This system has given thorough satisfaction.

Troublesome Diseases of Beans

BEAN growers of Canada will be greatly interested in a bulletin recently issued by Prof. H. H. Whetzel, of Cornell University, Ithaca, N.Y., in which is given a description, life history and effective treatment for the three most disastrous diseases of the bean crop. After discussing how these diseases are confused by growers, Bulletin 239 says in part:

"In order to combat them successfully it is necessary that the grower have some idea of the differences in these troubles, or at least that he apply the correct name so that he may intelligently consult bulletins or books dealing with them. The following key will enable you to determine this with considerable certainty: 1. Rusty brown or black spots on stems, pods or leaves. These spots occur on the seed leaves of plants just up. On the leaves of older planst they blacken and kill the veins on the underside. Diseased seeds show reddish brown or black spots and are often shrunken or shrivelled. This disease is the *Anthracnose*.

2. Leaves at first with large watery brown patches which shortly become dry and brittle. The diseased leaves curl more or less and look as though they had been scorched. Affected pods show "watery" spots, which do not become black as in the case of anthracnose. Entire pod may become soft and rotten. This disease is the *Blight*.

3. Leaves usually remaining green or in severe cases becoming of a sickly yellowish color. Spots on the underside of the leaf very small, rusty brown or black. Sometimes showing on the upper surface of the leaf as black spots with yellow borders, seldom occurring on the stems or pods. This is the true *Rust.*

BEAN ANTHRACNOSE

"The anthracnose is the most common and destructive disease of beans. It is very probably the disease that is destroying your crop. Its most apparent injury is on the pods, where it forms large dark rusty brown or black spots. It is on this account frequently known as "pod spot." The disease may and usually does occur, however, on all parts of the plant except the roots. It is caused by a fungus known to botanists as *Colletotrichum lindemuthianum*, which lives as a parasite in the tissues of the bean.

"The disease makes its first appearance on the bean seedlings, as they come up. It may then be detected, on at least some of the young plants, as brown discolored sunken spots or cankers on the seed-leaves or the stem. This early appearance of the disease is due to the fact that the fungus is usually carried over winter in the seed and so is already in the bean when it is planted.

"From the spots on stem and seed-leaves of the seedlings the spores find their way to the large leaves and branches of the rapidly growing plants. The large veins of the leaf are frequently eaten through and killed by the fungus, and holes or cracks with blackened margins appear in the blade. While this may not kill the leaf, it greatly lessens its efficiency as a starch maker, and so indirectly but effectively reduces the yield of seed.

"It is from the attack of the disease on the pods that the most direct and apparent damage to the crop results. During the time of blossoming and previous, the fungus has been spreading and becoming established on the stems and leaves, and it now attacks the young and succulent pods. With their tender growing tissue full of water and food materials, these pods offer the best conditions for the growth and development of the parasite. Spores from the spots on the leaves and stems fall on the pods where, in the presence of moisture and the high summer temperature, they germinate, forming a little sprout or germ tube, which penetrates the tender skin of the pod and, branching in the juicy tissues, gives rise to an anthracnose canker. These first appear as little brown or rusty spots, which enlarge and darken until nearly or quite black. The dead tissue dries and settles, leaving a sunken place in the pod. The spores may be scattered by the cultivator, the pickers, by animals, or by the wind in damp or rainy weather. As the threads or mycelium of the fungus penetrate deeper into the pod they finally reach the seed within. Unless the seed is destroyed by the fungus, it ripens and the enclosed mycelium becomes dormant. The presence of the fungus in the seed may usually be detected by the brown or yellowish discoloration of the seed-coat. When the seeds are badly affected, they become more or less shrivelled as well as discolored. It is thus easy to tell with considerable certainty whether seed to be planted is affected with anthracnose. When the seed is planted in the spring the enclosed but dormant fungus is planted with it. In the soft and fleshy seed-leaves in which it is imbedded the mycelium finds an abundance of food and grows rapidly, soon forming a spot or canker and producing spores which at once begin again to spread the disease to neighboring healthy plants.

TREATMENT OF ANTHRACNOSE

"Soaking the seed in formalin, corrosive sublimate and other poisons, and in hot water, have been tried by different experimenters with varying results. So far no one has been able to prevent the disease entirely by such treatment. The fungus mycelium is imbedded in the bean itself. Any poison that will penetrate sufficiently to kill the fungus will usually kill the seed. There are also other objections: that soaked seeds cannot be conveniently handled in the planter and if allowed to dry, many will 'slip' their coats; the reduction in 'stand' and consequent necessity of planting a larger quantity of seed is also another objection. On the whole, seed treatment cannot yet be recommended.

"*Selection of clean seed* is of first importance in growing a clean crop. All beans to be planted should be most carefully "hand picked" and all beans showing discolorations, wrinkles or blisters should be discarded. It has been found that in some cases where 95% of the beans were marketable, *only one per cent. was fit for seed.* As soon as the bean plants are well through the ground, they should be carefully examined and *all diseased seedlings pulled up, carried from the field in a sack, and burned.* This is the second step in the contest with the anthracnose and it is important, since even the most expert will overlook some of the diseased seeds in sorting.

SPRAYING WITH BORDEAUX

"As soon as the plants are well up, and the first pair of true leaves begins to unfold, *spray thoroughly with Bordeaux mixture.* Probably the best formula to use is five pounds copper sulphate, and four pounds of stone lime to 50 gallons of water. A stronger solution has been found to dwarf the plants, while the weaker solution is equally as effective in preventing the anthracnose. This should be so *thoroughly applied that every plant above ground will be completely covered.* In about 10 days or two weeks the plants should have a second spraying, using the same strength of mixture. This application should be as thorough as the first to cover and protect the new growth of leaves and branches. Unless excessive rains wash the mixture off, it will not be necessary to spray again until the pods are forming, shortly after blossoming. A third application of the same strength and thoroughness should now be made. The nozzles should be so arranged that the *pods as well as stems and leaves will be thoroughly coated.*

"In most cases three sprayings will be sufficient. If the seed was badly diseased and if the plants show an abundance of the anthracnose, more sprayings will probably be necessary to insure a clean crop. The effect of heavy rains in washing off the mixture may be overcome by adding to the Bordeaux mixture the following: two pounds resin, one pound sal soda, one gallon of water. Boil together until of a clear brown color. Add one-half this amount to each barrel of the Bordeaux. An extra spraying between the second and third, and another after the third when the pods are nearly full grown, will be sufficient in the worst cases.

"*The removal and destruction of diseased pods and stalks* is also a matter not to be overlooked. While the disease is most commonly carried over in the seed, it has also been demonstrated that diseased pods and stems thrown on the fields in which beans are to be planted will result in a marked increase of the disease the next season. For this reason all diseased pods and stalks should be burned, or, if they go into the manure pile, the manure should not be put on fields in which beans are to be planted.

"*Cultivating or working in the beans when wet* should be avoided as much as possible.

SUSCEPTIBILITY OF VARIETIES

"Certain varieties are more susceptible than others to this disease. This is notably true of the common 'Wax' varieties. Numerous 'Rust Proof' varieties have been placed on the market, but while some of them are more or less resistant, probably all will spot under conditions most favorable to the fungus. Dependence, therefore, should not be placed on the resistance ability of any variety. *All should be thoroughly sprayed if immunity to the disease is to be expected.* No record has been discovered of anthracnose on Lima beans.

If the vegetable grower wishes to obtain the maximum profit from growing vegetables under glass he must pay strict attention to details from the time the seed is sown until the crop is marketed, and then immediately put another crop in its place.—H. E. Reid, Toronto.

The Canadian Horticulturist

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THE NEW EXPERIMENT STATION

While the new experiment station in the Niagara district is not ideal in soil and climate, yet, in view of the facts that it is centrally located and that it was presented free to the province, the government could not very well have done otherwise than accept it. The reports of the officials sent by the Department of Agriculture to investigate the conditions and also the statements of many practical fruit growers who visited the farm, are, in the most instances favorable towards the choice. It is to be recognized, also, that it would be practically impossible to obtain a site against which no objection could be raised.

The two fundamental defects of the farm are those of climate and of soil. Both these defects, we believe, can be remedied.

The climatic defect is in the matter of earliness in season. The chosen farm, lying as it does on the lake shore, like other farms in the Niagara district similarly situated, is about a week later than farms located under the mountain. This means that there is more danger of frost at the lake, and it also may mean the barring out of certain varieties that require long seasons for maturity. This climatic detriment can be mitigated later on, if found necessary, by the purchase of a few acres directly under the mountain two miles away, where investigations could be carried on with any classes and varieties of fruits that experience may show cannot be grown so successfully at the lake.

The soil detriment lies in the fact that the percentage of light soil, as compared with the quantity of clay and clay loam, is too small. An experimental farm for best work with fruits and vegetables should have at least fifty per cent. of soil that is sandy in character. The new experiment station has very little over twenty per cent.; this is to be regretted. The defect, however, can be remedied by the purchase of the farm, or a portion of it, across the road from the station, upon which Mr. Rittenhouse has an option, and which he will turn over to the government at $100 an acre. Since it is possible to eliminate these two objections, the whole fruit growing community should unite in a whole-hearted effort to make this experiment station one of the most important on the continent.

Although peach soil on the farm is in the minority, there is a great variety of soils for work with other fruits and vegetables. The fact, that the nature of the soil varies from black muck and clay to clay loam and a certain amount of sandy loam, is important. It will make possible the carrying on of the wide range of experiments that the work will be expected to cover. This diversity of soil is of even greater import to the vegetable than the fruit interests.

While not much has been said on this point, it must not be forgotten that the vegetable growers of Ontario are keenly alive to the value of the work that can be carried on at the station, and that they are determined to see that their interests are not neglected. This diversity of soil will permit the growing of not only grapes, pears and plums on the heavier land, but the production of peaches and other small fruits on the lighter soil; and it also affords excellent opportunity for work with the different classes of vegetables. The question of geographical position is the next most vital consideration. In this connection we have only to consider the howl that would have been raised had the land selected been at any considerable distance to the east or west of the point chosen, to conclude that not much fault can be found on this score. It is unfortunate that the farm is not nearer a railway station. There is reason, however, to believe that this drawback is likely to be largely overcome.

While the generous donor is not the stamp of man who is looking for praise, he is deserving of the gratitude of the growers of not only the Niagara district, but of Canada, because if the station fulfils its mission, it should become the most important one of the kind in the Dominion. The comparative number of varieties of fruit and vegetables that can be grown successfully at Guelph and Ottawa, and at the experimental points in the Northwest, Quebec and the Maritime Provinces, is so limited as to leave a vast field of research work open for exploration at the new station.

It is not often we see a Canadian who has made his fortune in another country, so loyal to the land of his birth and boyhood, that he welcomes an opportunity to expend the riches gained among the people of another nation for the upbuilding of his own. Would we had more like him.

A word or two in regard to the man who will have charge of the station. He must be a big man in every sense of the word, or with the possibilities of becoming one plainly evident. The success of the work will depend on the man who has it in charge. A mistake in his selection must not be made. The fact that the station is to be allied with the Guelph Agricultural College sets a limit to the salary that can be paid, but it should not be less than $2,000 a year and a free house.

The plans for future work will be made as soon as the superintendent is appointed. There should be no plans or proportioning of the land for the different fruits that will require radical changes at a later date. Hence, it is important that more sandy soil be bought before the appointment. The director will then know what he has to work with, and better plans will be laid out accordingly. In the meantime Hon. Mr. Monteith is to be congratulated on the proof he has given that his department is alive to the needs of the Niagara district. The interest he has shown in this matter is sufficient to warrant the belief that it is the intention of the department to make the conditions at the new experiment station as nearly ideal as possible.

During the past two years we have greatly improved The Canadian Horticulturist, and now feel that the paper compares favorably with any of the other fruit papers published on the continent. What we want now is a larger circulation. We feel that many more fruit growers should be taking the paper, than are. This has led us to make the very generous offer which appears in this issue, to give $1,200 to any one who obtains 1,000 new subscribers for the paper. There are numerous sections in Canada where it should not be difficult to obtain this number of subscribers. Our readers can do a great deal to help us obtain new subscriptions by recommending The Horticulturist to their friends. A few timely words by our subscribers among their neighbors would be of material assistance to us in helping us increase our subscription list.

It is to be hoped that the establishment of a large experiment station in the Niagara District will not be the cause, for some time to come, of doing away with any of the smaller stations, now well established. Although conducted for some years, the variety tests on the small stations are just now proving of practical value to fruit growers. Varieties of grapes and tree fruits cannot be grown in a day. It takes the fruiting of more than one year to show up the characteristics that mark one variety distinct from another, whether the distinctions are for better or for worse. The government will do well to continue the sub-stations for a few years, at least until the new experiment station is in a position to give results.

The Canadian Horticulturist congratulates the fruit and vegetable growers of the various provinces on the fact that the express companies, operating in Canada, are to be under the control of the Railway Commission at Ottawa. The various fruit growers' associations of Canada repeatedly have urged the Federal Government to pass legislative measures to bring about this important condition of affairs. It is gratifying to know that, at last, their efforts have been rewarded.

Ontario Horticultural Exhibition

Believing that the Ont. horticultural exhibition has been established on a permanent basis, the directors have taken hold this year in a manner which indicates that the exhibition next Nov. will far surpass the past two attempts. The Toronto city council has accepted an invitation to appoint three members of the city council to act on the board of directors. This means that the city will take a greater interest in the exhibition this year than ever before. Already this year, several meetings of the board of directors have been held, whereas up to this date last year only one had been held. At the last meeting it was reported that half rates had been obtained over the railroads, and that it was probable that the railways will take hold of the exhibition and advertise it extensively along their lines, with the object of inducing a large attendance.

The prize lists will be ready for distribution early in July. They were not ready until October last year, which shows how much more energy is being put into the exhibition this year than before. Several new features will be added this year which it is calculated will draw a large attendance.

Every grower on any considerable scale should get a connection with dealers in various parts of the country so they may be able to consign their fruit where it will bring the best price under the conditions. If this method of selling should become the rule, the glut would become a thing of the past.

Kindly do not remove my name from the mailing list for The Canadian Horticulturist. The magazine is too interesting and I could not do without it.—R. S. Hood, Galt, Ont

Prince Edward Island Letter

Rev. Father Burke

Cold, wet spring that it is, exfoliation has been very slow; indeed, at present writing, the apple leaves are not more than half expanded. This, however, while it will make the harvest late of necessity, may not be adverse to a good fruit crop. There are blossom buds in abundance, and as the cold and wet weather must now, of necessity, be over, we may anticipate a splendid period of pollination and the setting of an excellent crop of apples at least. The cherry show is also encouraging. Under suitable circumstances there will be a full crop. We have not had many cherries for two years now. The plums are the only trees on which fruit buds are not noticeable in great quantity. Last year when everything else was slack the plum trees bore well. There can only be a very moderate crop at best this season.

The second spraying is just in progress. Many more are interested in it than previously. It is, however, a very disagreeable job at best, and if some means of procuring a skilled sprayer with good materials and appliances could be produced when wanted, we are sure but few would bother with the work themselves. The public sprayer is at work elsewhere; we hope he may not long be an unknown quantity here.

The Federal Government have sent their power sprayers hither and thither over Canada to meet this need, and help out systematic orcharding; we cannot get them to come here. Too small a country they think, we presume. Still, we have our rights even if the privileges are to be withheld, and must defend them. The power sprayer would find much to do this spring.

The orchard meetings, late as they were and held often in undesirable quarters, have created in many places much interest. Our Secretary of Agriculture, Mr. John C. Ready, has resigned; Theodore Ross, B.A., the *locum tenens*, went about with Mr. Richard Burke, the inspector, and as both are patriotic islanders, with deep faith in island horticulture, a good deal of enthusiasm was engendered. Inspector Burke should be employed permanently, and have a free hand in these instruction tours. Officialdom can't do it all—and often it has designs of its own to prosecute.

The Dominion Exhibition of 1906 is billed for Halifax, Nova Scotia, and that veteran manager, Mr. Bigelow, of Wolfville, has charge of the horticultural exhibit. He is working it up even now, as is meet and proper. The date, September, will however find all kinds of late fruits green and immature in Western Canada.

Packing and Marketing Fruit

J. J. Philp, Winnipeg, Man.

The way in which a grower packs his fruit is a very good index of that man's character. Into no other operation does a grower's individuality enter so largely as it does into the manner in which he prepares for the market the produce he raises. How to impress this upon the growers as a body and force the truth home to the betterment both of the man himself and his pocket-book is the problem. With the various object lessons before our eyes as to the success of others known to be the most careful packers or of the methods which have won precedence in the general market for the most carefully packed western fruit, it is indeed strange that so much of Ontario fruit bears an evil reputation.

To what cause must we assign the condition? Is it because of shiftlessness, carelessness, lack of proper pride in the occupation we follow, a desire to get a price we want for an article we have not for sale, or what is it? The individual offender is really the only one who can truthfully answer the question, and he will probably dodge it.

When we think of all the Ontario peaches that came to Winnipeg last season, and how nearly impossible it was to get a single basket of uniformly good fruit, we began to believe that something is rotten, not so much in Denmark, as in Ontario. And in what does this condition result? Just this—Ontario fruit is viewed with disfavor wherever it appears and is handled with a wide margin of safety; and until that province learns to label the bottom of its fruit by the top, she will not enjoy the favor of the buying public that naturally belongs to her fruits.

The first requisite in packing fruit is to get fruit that is fit to be packed. Many growers think they are selling the package instead of the fruit. Try as we may, our best efforts will not bring us entire crops of wholly perfect fruit. Some will always be deformed, off-color or undersized. A large proportion of this fruit has no legitimate place in the general market. It is all of value but should be consigned to its proper place in the cannery. Not more than 3 grades of peaches should ever be found on the stand or in the store—fancy, number one, and a family grade. In the case of apples and pears, I see no place usually for more than 2 grades. Small fruits ought to be handled with as much care and caution as to grades and uniformity of packing, although handled differently from orchard fruits. It pays with an average crop of grapes to pack in two grades.

When expert packers advise growers regarding the packing to use and the essential points to be observed in grading, packing and shipping, the average producer says all this means extra work, a variety of packages, loss of time, and added expense in many ways. The buyer's first answer is that it affords him great pleasure and satisfaction to put fruit on the market in this way. He knows it is the same quality from top to bottom; that the purchaser gets equal value all the way through the package; and, in the main, that he is well satisfied to buy from him again. He is sure of the top price all season. Some one says this is not bread and butter, only sentiment. That is true, but it would be much better for the Ontario fruit interests if some wholesome, healthy sentiment should permeate more thoroughly the rank and file of the growers. Close grading of our fruit and careful packing pays in money returns, and the expenditure in time and extra cost of packages is a good investment. I recommend a thorough, persistent trial of the plan to those who have never tried it, and feel assured that in the end it will be found a good working plan

Prizes for Vegetables

The vegetable section will be one of the most important features of the Ontario Horticultural Exhibition to be held in Toronto Nov. 6-10, next. The prize list this year has been considerably extended, and special efforts will be made to obtain exhibits from all parts of the province. One of the rules requires that all roots exhibited must be washed. The prize list will be issued some time during July.

First, second and third prizes of $2, $1, and 50 cts. will be given for artichoke, red, 12; artichoke, white, 12; beet, long, 6 roots; beet, round or flat, 6 roots; parsley, 6 bunches; radish, winter, 6 roots each, red, white, black; radish, forcing, 3 bunches of 12.

Three prizes of $2, $1.50 and $1, will be given for borecole, or kale, 1 tub; brussels sprouts, 3 stalks; cabbage, red, 3 heads; cabbage, Savoy, 3 heads; cabbage, pointed, 3 heads; cabbage, flat, 3 heads; cabbage Danish, baldhead, 3 heads; carrots, oxheart, 12 roots; carrot, intermediate or pointed, rooted, 12 roots; cucumber, greenhouse, 2; citron, large preserving, 2; egg plants, 3; endive, 6 heads; kohl rabbi, green, 3 roots; kohl rabbi, purple, 3 roots; leek, 6; lettuce, Grand Rapids, 3 heads; lettuce head, 3 heads; onion, white globe, 12; onion, yellow G. Danvers, 12; onion, Red Wethersfield, 12; onion, Red Globe, 12; onion, Prize Taker, 12; onion, Rocca, 2; onion, white pickling, quart; onion, yellow pickled, quart; parsnips, 6 roots; tomato, 12, any variety; potatoes, red Ohio, 12; potato, white, 12; potato, any other variety, 12; turnip, table, white, 6; turnip, table, Swede, 6; salsify, 12 roots.

Prizes of $3, $2, and $1 are offered for cauliflower, Erfurt, 3 heads; cauliflower, Snowball, 3 heads; celery, White Plume, 6 heads; celery, Paris Golden, 6 heads; celery, red, 6 heads; celery, winter, 6 heads; mushrooms, 1 lb.; onion, best string (not to exceed 3 ft.); peppers, 12 large red; squash, Hubbard, table green, 2; squash, yellow, table; vegetable marrow, bush or English; herbs, collection not to exceed 12 varieties.

For the best collection of onions, 8 varieties, 5 of each, a cup donated by Cruickshank Wagon Co., of Weston, Ont., valued at $10, is offered for first prize; second prize, $5; third prize, $3.

For the best collection of vegetables grown in York County, not to exceed 25 varieties, 3 of each variety; 3 prizes of $12, $8, and $5 are offered by the York County Council.

Fruit Prize List

Several important additions have been made this year to the fruit prize list for the Ontario Horticultural Exhibition, to be held in Massey Hall, Toronto, Nov. 6-10. All prize-winning packages become the property of the Association except in class 9. The prize list is as follows:

APPLES

Class 1.—Export or foreign market varieties.

Barrels ready for shipment. Prizes of $8, $7, and $6 are offered for Baldwin, Ben Davis, Golden Russet, Greening (Rhode Island), King, Spy, and Stark.

Standard boxes ready for shipment (fruit unwrapped). Prizes of $5, $4, and $3 for Baldwin, Fameuse, Golden Russet, Greening (Rhode Island), King, McIntosh, and Spy.

Standard boxes ready for shipment (fruit wrapped). Prizes of $5, $4, and $3 for Fameuse, Gravenstein, King, McIntosh, Spy, and Wealthy.

Class 2.—Domestic or home market varieties.

Barrels ready for shipment. Prizes of $6, $5, and $4 for Blenheim, Gravenstein, Ontario, Tolman, Roxberry Russet, and any other desirable variety not included in class 1.

Standard boxes ready for shipment (fruit unwrapped). Prizes of $4, $3, and $2 for Blenheim, Gravenstein, Ontario, Ribston, St. Lawrence, and for any other desirable variety not included in class 1.

Class 3.—Dessert varieties.

For plates of five, prizes of $1.50, $1, and 75 cts. are offered for Fameuse, Golden Russet, King, McIntosh, Wealthy, Spy, Spitzenburg, or any other desirable variety named and for any desirable seedling.

Class 4.—Cooking varieties.

For plates of 5, prizes of $1.50, $1, and 75 cts. are offered for Alexander, Baldwin, Blenheim, Cayuga, Greening (Rhode Island), King, Ribston, Spy, or any other desirable variety named, and any desirable seedling.

Class 5.—Pyramids of fruit.

For pyramids with a circular base of 17 in. diameter, or barrel hoop size, prizes of $3, $2, and $1 are offered for Ben Davis, Baldwin, Blenheim, Gravenstein, Fallawater, Fameuse, King, McIntosh, Ontario, Scarlet Pippin, Spy, and Wolf River.

PEARS

Class 6.—Plate exhibits.

For plates of 5, prizes of $1.50 and 75 cts. are offered for Anjou, Bosc, Clairgeau, Diel, Duchess, Hardy, Howell, Kieffer, Lawrence, Winter Nelis, and any other desirable variety, correctly named.

Class 7.—Export varieties.

For boxes ready for shipment (fruit wrapped), prizes of $3, $2, and $1 are offered for Anjou, Bosc, Clairgeau, Duchess, Winter Nelis, Kieffer,

Lawrence, and any other desirable variety, correctly named.

GRAPES

Class 8.

Prizes of $1.50, $1, and 75 cts. are offered for Agawam, Concord, Lindley, Niagara, Vergennes, Wilder, and any other desirable variety.

Prizes of $2, $1.50 and $1 are offered for black grapes, best 9 lb. basket; red grapes, best 9 lb. basket, and white grapes, best 9 lb. basket.

Prizes of $3, $2.50, and $1.50 are offered for black grapes, best fancy package; red grapes, best fancy package; white grapes, best fancy package.

DISPLAY FRUIT

Class 9.

Prizes of $25, $20, $10, $8, and $5. are offered for best display of fruit in commercial packages exhibited by an agricultural or horticultural society, or fruit growers' association; table space limited to 30 sq. ft. for each exhibit.

Prizes of $12, $8, $5, $4, and $3, are offered for best display of fruit not in commercial packages exhibited by an agricultural or horticultural society or fruit growers' association; table space limited to 30 sq. ft. for each exhibit.

PRESERVED FRUIT.

Class 10.

Prizes of $2.50, $1.50, and $1, are offered for best quart sealer of canned fruit of each of the following: Blackberries, Cherries black or red, Cherries white or yellow, Gooseberries, Grapes black or red, Grapes white, Peaches white fleshed, Peaches yellow fleshed, Pears, Plums blue or red, Plums green or white, Raspberries red, Raspberries black, and Strawberries.

Prizes of $2.50, $1.50, and $1 are offered for best pint of jam of each of the following: Currant black, Gooseberry, Grape, Peach, Pear, Plum, Raspberry, and Strawberry.

Prizes of $1.50, $1, and 75 cts. are offered for best half-pint jar of jelly of each of the following: Apple, Crab Apple, Currant red, Grape, Quince, and Raspberry red.

Prizes of $3, $2, and $1 are offered for Grape Juice, unfermented. best 1 qt. bottle.

The Marketing of Vegetables

J. W. Rush, Humber Bay, Ont.

One of the secrets of success in the marketing of vegetables is to have the right thing at the right time, put up in the right way. The Ontario Vegetable Growers' Association is fairly well organized, and it has adopted THE CANADIAN HORTICULTURIST as its official organ.

It would be a good plan for our association to arrange a system of bunching for early vegetables. For early beets six in a bunch, nicely graded, might do. Let the large ones be put in bunches and the smaller ones in bunches instead of mixed together as we so often see them. Radishes, three-quarters to one inch in diameter, 10 in a bunch. In the smaller ones 12 to 14 would make a nice saleable bunch. Carrots, very early and of nice size, one inch in diameter, might go six in a bunch, and very early onions 12 in a bunch. Later on, when the onions are larger, six in a bunch might do. Other vegetables could be bunched in the same way.

If bunches of regular sizes were adopted by our association, we would know when we see market prices quoted, what was meant. Bunches of the size mentioned would sell for 40c. per dozen, and retail for five cents per bunch. I give these suggestions to set the ball rolling, and would like to hear from others on the bunching question.

A Warning.—THE HORTICULTURIST has received word that some fruit growers and farmers in different parts of Canada are using as a remedy for insects, certain substances placed in a hole bored in the trees. Although the folly of this practice has been exposed many times in our columns, THE HORTICULTURIST again directs the attention of fruit growers to the fact that remedies of this kind are absolutely useless.

Vegetable Growers are Pushing Matters

MANY important matters were discussed at a meeting of the directors of the Ontario Vegetable Growers' Assn. held in Toronto June 21. It was reported that the assn. has branches at Ottawa, Kingston, Napanee, Toronto, Hamilton, St. Catharines, Brantford, Sarnia, Tecumseh, and Chatham, with a total membership of 426. Directors were present from most of these branches, those in attendance being Messrs. F. F. Reeves, the pres. of the assn.; Jos. Rush, R. Lankin, Geo. Syme, T. Dellworth and A. W. Shuter, of the Toronto branch; T. Mockett, of Ottawa; W. A. Broughton, of Sarnia; D. Rocheau, of Tecumseh; W. A. Emory, of Hamilton; A. McMeans, of Guelph; and the sec'y. H. B. Cowan.

It was decided not to hold the celery competition that had been proposed. A letter was read from the Kingston branch asking what by-laws are in force in the different cities to prevent the purchase of vegetables on the market before a certain hour in the morning. The meeting decided to gain this information from the different cities and to make it public.

On the tariff question it was decided that as the assn. has already laid its views before the government, nothing further can be done until the government informs the House of Commons what its intentions in this matter are, when, if it is necessary, a special meeting of the directors will be called to discuss the government's intentions and to decide on the taking of such action as may be deemed necessary.

The representatives from the different branches reported on what has been done by their branches so far this year. These reports were very encouraging. Several of the branches have purchased goods for their members at greatly reduced prices, interesting meetings have been held, at which discussions on vegetable growing have taken place, and some of the branches are arranging to hold picnics during the summer.

On motion of Mr. Rocheau it was decided to have copies of the constitution printed in French, as it is believed several branches of the assn. can be formed in French sections. Methods of improving the crop reports, which are obtained monthly by the assn., were considered.

It was decided to make a grant of $150. to the vegetable section of the Ont. Horticultural Exhibition, and in addition to pay the express charges on all exhibits sent in from points outside of Toronto. Prize-winning exhibits, and exhibits on which the express charges have been paid, will become the property of the assn. after the exhibition. It was decided to offer 3 prizes of $12, $8, and $5, or a total of $125, for the best essays on the growing of each of the following varieties of vegetables: potatoes, cauliflower, celery, tomatoes, and onions. Competitors must be members of the assn. and the essays must deal with the soil and its preparation, varieties, planting, cultivation, harvesting and storing. Essays must not exceed 1,000 words. The best essay will be read at the annual convention and published in the annual report.

Mr. McMeans was asked to explain what work is being done at the Guelph Agri. College, for the benefit of vegetable growers. He reported that the college is conducting variety tests in 55 kinds of onions, 28 of carrots, 55 of beets, 10 of salsify, 68 of radishes, 88 of tomatoes, 36 of cauliflower, and about 80 of lettuce. Many of the varieties are practically the same. The college is investigating also the germinating power of the seed, and will publish a report on this, giving the names of the seedsmen. This latter announcement was heard with much approval. Mr. Rush stated that he had been at the college recently, and found that the college was raising the same insect pests on their vegetables as the growers. Mr. McMeans was asked what was being done at the college to find remedies for these pests. He reported that work along that line is being conducted by the entomologist.

On motion of Mr. Mockett, seconded by Mr. Broughton, a committee, composed of Messrs. Rush, Dellworth, and McCalla, was appointed to visit Guelph and investigate the work being done there on behalf of the vegetable growers, and in the combatting of vegetable insect pests. The committee was instructed to prepare suggestions for new lines of work that might be taken up at the college, and to report on the work now being done there, the result of their investigation to be made known by Sept. 1. It was decided to have a representative of the Kingston branch, and two from the Ottawa branch visit the Central Expt. Farm at Ottawa for the same purpose. It is decided to hold the annual convention of the assn. Nov. 8 and 9, at the time of the Ont. Horticultural Exhibition, and to hold a directors' meeting on Nov. 7.

The secy. was instructed to endeavor to make arrangements to have a capable speaker attend meetings of the branch assns. during Oct. Considerable enthusiasm was manifested at the meeting, the belief being freely expressed that the assn. will soon grow to much larger proportions.

Spraying Experiments at Meaford

T. B. Rivett, B.S.A.

THE Ont. Dept. of Agri. is conducting experiments near Meaford with Bordeaux mixture to demonstrate the practical value of spraying to check the ravages of the apple scab. Previously this trouble has been so great as to render the greater amount of apples in this township unsaleable.

Last year the results were not as satisfactory as expected, so, in arranging this year's work, fewer orchards were chosen, and these were the pick of last year's experimentation. They are 8 in number, containing about 1,400 trees, and situated within a radius of 5 miles of Meaford and on 3 different concession roads, thereby easily enabling the farmers in the township to watch the result. It is the intention to spray 3 times and should the scab develop to any degree a fourth application will be given.

Poisoned Bordeaux is being used in all sprayings. The formula adopted is as follows: blue stone, 4 lbs.; lime, 5 lbs.; Paris green, 8 ozs.; water, 40 gallons. The first spraying was applied in the early part of May, and was completed before blossom; the second immediately after bloom had fallen, and the third will be applied in July.

We are testing, also, the value of lead acetate as compared with Paris green as a poison. Two blocks, side by side, were chosen, 1 being sprayed with the above-mentioned formula, and the other with two bbls. of lead acetate as a substitute for 4 ozs. Paris green. The lead acetate is somewhat harder to dissolve, but will stay in solution longer. It spreads through the solution more easily, and offers less obstruction in the nozzles. The poisoning quality, however, will not be definitely ascertained until the fruit is mature.

Owing to some trouble occurring last year with regard to the russetting of apples, test trees have been left in every orchard, and a strict record is being kept of the climatic conditions, so as to observe the relation between atmospheric conditions, spraying and russetting. The machine used in this series of experiments is a gas power machine, and is giving very fair results, the power costing from $1.50 to $2 a day.

We consider THE CANADIAN HORTICULTURIST the leading horticultural magazine for our province. All success to it.—M. S. Middleton, Vernon, B.C.

Vegetable Crop Outlook in Ontario

ALTHOUGH rather backward in season, the vegetable crop in Ontario is looking well. The prospects are bright for large crops of most vegetables, and the ruling prices promise to be slightly higher this season than last. In some sections, considerable damage is being done by insect and fungous pests. The following reports by crop correspondents of the Ont. Vegetable Growers' Assn. show the situation in the various districts:

OTTAWA

The acreage under vegetables is about the same as usual. Early cabbage is almost double the usual crop. Cauliflower is a fair crop. Beans are a little heavier than other years, tomatoes and peas about the same, and corn nearly double. A pretty heavy crop of celery is being put in now, too much I consider, for the lateness of the season and size of the plants, to produce good celery in the fall. The weather conditions for celery are very unfavorable Some days extreme heat, others very cold, causing a peculiar soft growth, and rendering all plants liable to disease and grubs. Some of our tomato growers are complaining of a black dry spot on the blossom end of the tomato showing through the crop. Slugs and snails are going to be bad pests this season. Transplanted onions seem to be about double the usual crop, seed onions about the same as usual. The last few hot days are causing a rank, quick growth both of onion and weeds which may hurt the crop, for it is impossible to get on the ground yet. The prices on the market are about as follows: good lettuce, 15c. to 20c. a doz. heads; beets, 50c. a doz. bchs. of 4 each; rhubarb, 20c. to 30c. a doz., according to quality; asparagus, 80c. to $1 a doz. bchs.; spinach, 25c. a bush.; onions, 15c. to 20c. a doz. bchs.; radish, 15c. to 20c. a doz. bchs.—T. Mockett, June 20.

NAPANEE

The weather has been quite favorable; no injury from frost. The maggot has troubled onions considerably, some patches being entirely gone; still, I think the crop will compare very favorably with last year. Tomatoes are doing fine, and promise an extra good crop. Beans, potatoes, lettuce, etc., are a splendid crop; no noticeable increase in either. Potatoes (old) are $1.25 a bag of 90 lbs, and scarce at that.—E. M. Sherman, June 20.

BURLINGTON

All that is required is warm weather with a few occasional showers to make the crops very fine, both in the growth of cabbage, cauliflower, onions, etc., and the ripening of tomatoes. Strawberries are now in full swing. Asparagus and rhubarb are about finished. Onions, both seed and transplanted, are doing exceptionally well, and unless the maggot begins destructive work, the crop will be 25% above last year. Cabbage, also, has made rapid growth, and cutting has commenced with some growers; the maggot has been rather destructive in some sections. Early cauliflowers are very scarce; some patches have been cleaned out by the maggot; the cutting with one or two of the growers has just commenced. Tomatoes, both early and late, are doing well, although in some places the cut worm has been very destructive. The early tomatoes have set fruit more plentifully than usual. Melons, egg plants and peppers have been planted to about the same extent as last season. The early planted melons suffered a good deal from cold weather, while later planted ones have done very fine. Peppers have been planted rather more extensively than last season. Commercial fertilizers have been used rather freely by a great many of the growers, but up to the present the effect is not noticeable. Celery is doing very nicely.—J. A. Lindley, June 20.

HAMILTON

The acreage of vegetables has increased about 10% during the last year or two, owing to the increased population of Hamilton. Old potatoes are bringing $1.00 to $1.35 a bag. New potatoes are just coming in and selling at 90c. to $1.10 a 11 qt. bskt. New arrivals are also beets and carrots, and are worth 25c. and 35c. respectively. Green peas are coming in larger quantities, price from 30c. to 45c. a 11 qt. bskt., according to size. Beans have not put in an appearance yet. New cabbage, while quite small, are bringing 75c. to $1 a doz. heads. The tomato outlook is not so promising as earlier in season. The plants in many instances are very small, and some long and slender, and not having been planted quite so early as usual, will have a tendency to lessen the usual yield. The acreage is not so large this year as contract price is only 25c. a bush., while last year about 60,000 bushels were contracted for, through the efforts of assn., at 30c. a bush. The annual average yield in this district is about 150,000 bush. to 175,000; besides, several thousands are annually shipped to all points in Canada.—Jas. A. Stevens, June 21.

NIAGARA FALLS SOUTH

All hardy vegetables look well after the recent rains and are growing nicely. The frosts on the nights of June 10 and 11 injured all tender vegetables. On low ground, melons and cucumbers were in some cases killed completely. Beans were also severely affected. Corn shows its tips frozen to a pale straw color. Squash, pumpkin and tomatoes seem to have escaped injury. Cabbage maggot has been very destructive this season; whole patches of early cabbage have been destroyed. Onion maggot has also been very prevalent; it has reduced the crop in many cases. Early peas and beans made their first appearance on the local market on June 16. Old potatoes are in great demand for planting, and are selling for $1 a bush. The following prices were obtained on local market June 15 to 20: new beets, 50c. a doz. bchs.; peas, 40c. a pkt.; beans, 50c. a pkt.; radish, 20c. a doz. bchs.; onions, green, 20c. a doz. bchs.; head lettuce, 20c. a doz.; asparagus, 50c. a doz. bchs.; rhubarb, 30c. a doz. bchs.; strawberries, $1.50 to $2.50 a crate of 24 qts.—Thos. R. Stokes, June 21.

CHATHAM

Vegetable crops were badly damaged by the recent cyclone. Tomatoes suffered most, and the supply of early ones will be materially reduced. The later ones will pick up; a good demand is anticipated, as another canning factory has started. Onions were badly injured in the path of the storm, but these are recovering and may prove to be a fair crop. Transplanted beets made their first appearance on June 2 and found a very ready sale; seed beets also are coming in. Melons and cucumbers are backward, owing to the cool weather. Potatoes are looking well, and digging will soon commence. Celery and cabbage look promising on account of the frequent showers. Strawberries are a great crop this season.—Fred. Collins, June 19.

LEAMINGTON

Tomatoes, cabbage, wax beans, cucumbers, peas and melons are doing very well, considering the weather conditions during the last few weeks. Early cabbage is commencing to move, but is not up to the average in size, owing to too much rain and cool weather. It is being sold at $2 a ½ bush. crate, F.O.B. here. Cucumbers are all under glass, and are selling at $1.20 a 11 qt. bskt. Peas, 50c. a 11 qt. bskt. Wax beans will be on in about 2 weeks. Tomatoes have set well on the vines in some places, and in others very thinly. The prospect is that there will be small shipments of them made in July; but during Aug. there will be an abundance. In general, there is likely an increase of 25% in the crops, as compared with last season.—E. E. Adams, June 19.

SARNIA

All kinds of vegetables are looking well. We have had some complaints of loss caused by too much moisture. About the usual acreage in vegetables, except early potatoes, which are above the average in acreage, but I think about a week later, and showing every indication for a good crop. Some late potatoes have been hurt by the wet weather, and may be replanted. There is a fair demand for vegetables in Sarnia, and prices are steady, bunch stuff coming in freely, and cabbage will be ready in a week.—W. A. Broughton, June 20.

TORONTO

HUMBER BAY.—More potatoes and corn have been planted this year than usual. Onions, not such large patches sown as in other years. The seed has germinated very poorly, not more than half a crop; not many maggots yet. Beets are good, and large quantities are going to market. Parsnips are a very thin crop generally. Carrots good, about the usual quantity sown. Early cabbage are coming on rather slowly; the maggots are working on the light soils. Cauliflowers are just heading; small lots planted so far. Early peas just ready, selling at $1.50 a bush., 50c. to 65c. a bskt; no large lot sown. Celery is growing slowly, about the usual quantity has been set out. None ready for market. Mr. J. Gourley, of Deer Park, had 2,000 on the market last week, very small, sold at $15 a 1,000. Spinach is very good, sells fairly well. Radishes have been very plentiful, are selling much better than other years, about 12c. to 15c. a doz. bchs., 12 in a bch. Rhubarb, good crop, but not so much on the market as in other years. Beans are doing well, about the same patches as other years. Tomatoes are looking very well, having had no setback so far; no very large lots planted—no more than other years. Asparagus will soon be over for this season; has been poor and light cutting generally. The cut worms are numerous this year. I notice the little grey birds are on their tracks, and the robin also will do his part to help clear them until the cherries are ripe. It is likely the slug will be bad on the cabbage. Fresh slacked lime dusted on them is sure death to the slugs, and is good for the cabbage. Try it.—J. W. Rush, June 21.

BRACONDALE.—There is an enormous amount of transplanted beets this season, readily selling at 20c. and 25c. a doz bchs. Seed beets and carrots, also peas, are ready for market. The crop will be about as usual. Early cabbage are coming along splendidly, some already cutting at 60c. doz. The early tomatoes are looking well, the first blossom having set nicely, but the later blossom is falling, owing to the wet weather. We are busy planting celery, late cabbage and cauliflower. The acreage will be about as usual. Potatoes are in blossom. Crops are doing nicely, with the exception of the tomatoes, the second bloom of which will be a failure.—A. W. Shuter, June 19.

DONCASTER.—Crops are looking well. Yellow Danver onions have come rather thin with most of the growers which, with rather a smaller quantity sown, will make the crop lighter than last year. Other crops are being grown in about the usual quantities. Tomatoes from greenhouses are coming in in small quantities, and selling readily at 15c. a lb.—C. Gibbard, June 21.

SCOTLAND

The wet weather has kept the grower from working in the onions, and as the weeds have got the best of some, a number of acres will have to be plowed up. The maggot also is working very fast. The 1st planting of cucumbers have been all frozen, and they are planting them again this week. Strawberries are only about half a crop.—E. G. Malcolm, June 19.

PRINCE EDWARD COUNTY

Potatoes look well, but the blight has made its appearance in some places. Early peas are looking fine and promise a good crop. Tomatoes and corn are doing well. The berry crop will be light.—Stephen Lake.

Fruit Prospects on the Whole are Encouraging

THE reports from crop correspondents this month show that for most varieties of fruit, prospects are encouraging. Plums are going to be a very light crop everywhere. Cherries, also, will be below the average. Along the north shore of Lake Ontario and in Eastern Ontario the frequent rains have caused damage by fungous diseases. Winter killing of grapes and small fruits is reported. The following reports will give a good idea of the situation:

SOUTH-WESTERN ONTARIO

Kent County.—The fruit crop with the exception of peaches and Japan plums, which are almost a failure, looks quite promising.

Summer and fall apples promise a full crop. Winter apples of many varieties are loaded, but some varieties that bore heavily last season are light. Pears promise a fairly good crop, although perhaps not an extra heavy one. The plum crop here, like the peaches, is only a small one at best, and the Japanese varieties had their fruit buds winter killed. The recent storm did much damage in spots to fruit and other trees, uprooting a great many, and where hail accompanied it the fruit is somewhat marked and bruised. The apples appear to be free from scab so far, whether on account of the season or as a result of spraying, I cannot say.—W. D. A. Ross.

Lambton County.—Fruit prospects are for a fair crop. Apples have set well and promise to be a large crop in orchards that have received proper attention, but have not set very well in neglected orchards. On the whole it will be twice as large as last year. Plums and peaches are practically a failure.—D. Johnson.

NIAGARA DISTRICT

Fruitland.—Apples bloomed on about 50% of the trees, and have set well, and are free from insect and fungus damage, but twig blight is seriously prevalent, especially on Greening. It seems to have a special phase of attack on the fruit spurs, and more especially on the heaviest loaded trees, in many cases fully 4-5ths of the crop being destroyed. The attack must have occurred while in bloom. Many trees are still dying from winter freeze of 1903-04, and from the effects of the past wet seasons. Still the crop from present indications will run an average or as good as last pear Pears are heavy and healthy looking, with some little fire-blight appearing. Some pear psylla, but seems to have been destroyed by the storm. Plums are the lightest crop for years, with a light attack of curculio the past few days, being much later than usual. Sweet cherries have fallen heavily the past few days, and only show a light crop remaining.

Sour cherries are much better, being a good average and free from curculio. Peaches a good crop and looking well, with no curl leaf even where not sprayed. Currants, both black and red, more than an average crop, but with bad attack of aphis on blacks, which now seems to be disappearing. All kinds of berries seem to be looking well, the cool, showery weather being especially favorable for strawberry development. Oyster shell bark louse on sickly Baldwin apple very prevalent last season seems to have been largely parasitized, and will not be so bad this year. The present showery weather will demand thorough spraying now to save the apple crop from fungus. Spraying is much more general than ever before, and is being much better done. There is another promising and beautiful crop and healthy growth of Whitesmith gooseberries, perfectly free from mildew by one application of lime and sulphur as buds were swelling. I think this will mean the successful culture of the English varieties in this country. Some of ours are so heavily laden that they are lying on the ground at present writing with fruit nearly an inch in diameter, and this without other manure than hairy vetches plowed down.—Joseph Tweddle.

Grimsby.—On the whole we have an encouraging prospect for fruit. Strawberries are remarkably fine owing to the frequent showers. Cherries, especially the pie cherries, have set a very abundant crop; and the same may be said of some kinds of sweet cherries. But with the latter you never know what you have until after the harvest, for such quantities are lost with cherry rot. Plums are very poor. There are no Japan plums, and very few English plums. Peaches are fine; the "June Drop" is on them at present, and large quantities are falling; but the result is a wholesome thinning of the crop, otherwise too heavy. Pears are fine, abundant, clean, and growing rapidly. Apples have set very well; but the Baldwins and Greenings, which were heavy last year, are very light. Spys show well, but Cranberry and some other varieties are suffering from leaf blight.—Linus Woolverton.

ST. CATHARINES

The earlier predictions of a generous crop of nearly all kinds of fruit seem in a fair way of being carried out; everything looks very promising. The strawberry acreage is not large, but the weather is favorable for large berries, and an extra yield. Raspberries are looking extremely well. Peaches, pears, plums and apples, generally speaking, will be abundant. Grapes are looking exceptionally fine; but, in some cases, the leaf is showing slight symptoms of the dreaded black rot. Timely spraying with the Bordeaux mixture will prove almost a specific if followed up at regular intervals. The questions of suitable packages, and of the rapid and careful transportation of our fruits to the rapidly-increasing markets of our country, are such as will be found to be of vital importance this year.—Wm. H. Bunting.

HAMILTON

Owing to the continuous excessive rains, strawberries are not ripening very rapidly, which will prolong the season. The acreage grown this season is much less than 1905, owing to the scarcity of plants last year. The open winter killed the plants to a great extent, and, therefore, the prices of berries will remain firm. The canning factories are paying $1.25 a crate of 24 boxes, having made contracts early in the year, and as the grower gets his crates and boxes back this is considered a good price, and is equal to $1.45 shipping. The market price varies according to quality from $1.50 for Beder Wood, Michael's Early and Crescent, and other soft varieties to $1.75 and $2 for Williams, Brandywine and Dunlop, which are the best commercial berries for shipping and preserving purposes; the average lowest price will be about $1.50 a crate. Cherries will follow strawberries, and will be an abundant crop, particularly Early Richmond and Montmorency, which are the two best varieties for preserving. They are coloring nicely, but should the present rains continue, rotting is to be feared; the price will run about 75c. a 11 qt. bskt. The acreage of cherries is on the increase. Raspberries will be an abundant crop with the exception of early varieties, which are not showing up very well. Marlboro', an early variety, and Cuthbert for late, are the preferred sorts. Price contracted by canning factories is $1.60 a crate of 24; acreage is a little on the increase —Jas. A. Stevens.

NORTHERN ONTARIO

Clarksburg.—The south shore of Georgian Bay promises a very good crop of apples. Nearly all varieties well represented except Baldwins, which are rather light. Greenings are unusually heavy. Both Ben Davis and Spy are full crop. Pears were showing to better advantage a week ago, but are still very fair, and not likely to drop much more. Cherries appear to be full crop and quality better than usual. Plums are a complete failure, but probably on account of trees all being old, and no new plantations being made lately. On the whole the situation is most encouraging.—J. G. Mitchell.

EASTERN ONTARIO

Durham County.—The fruit crops should be about as follows: Apples of all kinds very good. equal to or better than last year. Pears a light crop. Cherries, sweet varieties a complete failure; Montmorency and other sour varieties a medium crop. Plums of all kinds are a complete failure. Grapes are nearly all killed to the ground. Currants and gooseberries a good crop. Raspberries and blackberries only medium. Strawberries good, but not many planted. I think the unusually mild winter caused

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the blossom buds to start, and being followed by a very cold dip, many of the blossoms were killed.—E. C. Beeman.

Northumberland County.—Strawberries are a light crop. There was considerable winter killing where not protected by covering. Raspberries were also killed back to a more or less extent. Currants are fairly good. Gooseberries are very light, and mildewing some. Grapes that were not laid down for the winter and covered, are dead to the ground, including even the wine grapes that stood the winter of two years ago, and are sprouting from the root. Plums and cherries are practically a failure. Only a few Richmonds and the common red cherries have any fruit on. The others had a good show of blossom but they never opened out, and seemed to prevent the leaf bud from coming out for some time. The buds were all killed on peach trees that were loaded last year and are sending out fictitious buds. There are no Bartlett, Anjous or Bosc pears, and other varieties are very light. Duchess apples are a fair crop; Snow medium; practically no Baldwins or Greenings. Spy, Ontario and Stark are medium. Russets bloomed heavily; Ben Davis only a medium crop of bloom and have set a fair crop. Insects are on the increase this year. Bud Moth was very injurious. The green worm that eats the fruit has done more damage this year than usual. Canker worm is on the increase. Oyster shell bark louse seemed to be far more numerous than usual; some trees were practically covered with them. Fungus developed very rapidly during the warm foggy days that we have had lately, also fungus has appeared on the foliage. The leaves are turning yellow and dropping. There has been far more spraying done this year with the Bordeaux mixture than usual.—W. H. Dempsey.

Prince Edward County.—The apple crop will not be nearly as heavy as at first thought, on account of the continued wet weather. The bloom was very heavy but did not set well, and the June drop will be very heavy, so that I do not look for any more apples than we had last year, if we have as many. Duchess are a full crop, other fall apples only fair. Ben Davis and Stark are much lighter than last year, while Russets, Spys and Greenings are better than last year. The price of apple barrels will be about the same as last year.—Harry Dempsey.

Dundas County.—Owing to the lack of snow during the winter and to some very mild weather when the frost was nearly all out of the ground, followed by extremely cold weather, several varieties of our tender fruits were injured. Strawberries, except in favored places, are a very light crop, being injured by the winter and the first blossoms by late frosts. Currants and gooseberries a light crop. Raspberries almost a failure. Early apples, as Duchess, are a good crop, while others, as McIntosh Red, Fameuse, etc., will be a light crop. Cherries and plums a failure.—A. D. Harkness.

WESTERN QUEBEC

Westmount.—Apples in my immediate vicinity promise to be a large crop, especially early varieties. Pears a good crop, principally Flemish Beauty. Plums, of the European varieties, a total failure; trees badly winter killed. It was a very severe winter on strawberry and raspberry plantations, there being very little snow protection. Everything is growing well, especially the weeds. Labor is very scarce, and $1.75 a day for weeders is more than we can get out of the crops.—R. Brodie.

NOVA SCOTIA

Shelburne County.—The weather has been extremely cold and wet, but we have had an

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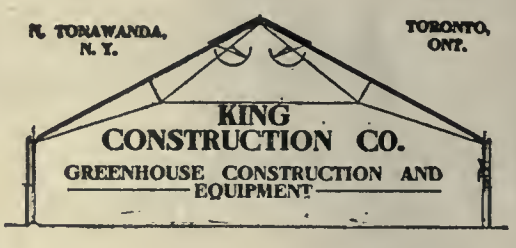

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abundance of apple bloom which seems to be setting fairly well. Pears bloomed nicely, but the heavy frost the last of May injured them, as they about all have fallen. Plums seem to be setting well. Gooseberries are a full crop and are about out of danger. Red currants, also, are a full crop. Strawberries were winter killed in some places. Outside of that they are looking well, but they are late. The caterpillar pest seems worse than usual.—J. Lewis McKay.

Kings County.—The prospect for a good crop of apples never looked more promising. The weather conditions have been very favorable. Fruit growers generally have given more than ordinary care to the orchards, pruning, cultivating and especially spraying thoroughly. The third spraying is now about finished. The orchards blossomed exceptionally full, and appear to be setting well. The "black spot" has not made its appearance to any extent yet. Many insects made their appearance, but were effectually stamped out by those who persistently sprayed. It looks as though we will have a full crop of Gravensteins, which have been a partial failure for the past four or five years. Kings, Blenheims, Russets and Baldwins promise well.—J. Howe Cox.

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May be obtained free of cost by writing to THE CANADIAN HORTICULTURIST. We have a man at the Union Station, Toronto, who is engaging laborers, for our readers, from among the immigrants as they arrive. Write us for particulars.

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Why not work up a sure market of your own? There are scores of grocers and fruit dealers throughout Canada who would be glad to take your fruit at good figures if you can supply them regularly with first-class freshly picked fruit.

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B.C. Fruit Growers' Association

W. J. Brandrith, Sec.-Treas., Ladner, B.C.

The regular quarterly meeting of the B.C. F. G. Assn. convened in the Agri. Hall, Duncan's, on June 22. There was a fair attendance considering the busy time of year. Great interest was manifested in the subjects of the various speakers. The pres., Thos. A. Brydon, of Victoria, called on J. C. Metcalfe, of Hammond, for an address on small fruit. Mr. Metcalfe's remarks were more on the cultivation of the strawberry, and as it was well known that he had made a success of this, what he said carried weight. Henry Kipp, of Chilliwack, described his methods of planting and pruning. Maxwell Smith, Dom. Fruit Inspector, explained the workings of the "Act Respecting the Sale of Certain Commodities." An interesting discussion followed. A resolution calling on the Prov. Govt. not to do away with the inspection of citrus fruit was carried unanimously.

The assn. has arranged for meetings to be held as follows: Kelso, July 4; Nelson, July 5; Creston, July 6; Cranbrook, July 7; Revelstoke, July 10—the meetings to be addressed by Thos. A. Brydon, on "Planting and Pruning"; by J. C. Metcalfe, on "Small Fruits," and by Maxwell Smith on "Orchard Cultivation." Another series of meetings will be held at Fairview on July 3; Keremeos, July 4; Penticton, July 5; Summerland, July 6; Armstrong and Enderby, July 7; Salmon Arm, July 9; Revelstoke, July 10. The speakers and topics will be as follows: R. M. Palmer on "Transportation and Markets"; Henry Kipp, on "Orchard Cultivation," except at Revelstoke, where his subject will be "Varieties to Plant," and W. J. Brandrith on "Spraying," except at Armstrong, where he will speak on "Beautifying the Home Surroundings."

Our Nova Scotia Letter

G. H. Vroom, D.F.I.

It is about the middle of June, and the province of N.S. looks beautiful and is very much admired by the eager sightseer. The cold, wet spring made seeding late, but farmers have their seed about all in the ground. The power sprayer, under the direction of the fruit division, is operating in Falmouth, Hants county, this season, and is doing good work, and insects are on the run. The fruit growers are taking a lively interest in spraying, and have been greatly benefited by the demonstrations given, and have learned how the mixture should be prepared and applied. We are using 6 to 8 ozs. of Paris green to 40 gals. of mixture, as the caterpillar is very numerous in N.S. this season.

Stone fruit probably will be an average crop. Apples bloomed very full, and appear to be setting well, with the exception of Spy and one or two other varieties. Pears are showing an average setting. Strawberries look fair only, and show the effect of an open winter. The crop will be below the average; the berries are small for the time of year. Our markets are well stocked with imported small fruit and a few last year's N.S. apples are yet to be found in the shop windows in Halifax.

Several new fruit packing houses are being built along the lines of the D.A. and H. & S.W. Rys., varying in capacity from 6,000 to 10,000 bbls. This is one more step in the proper direction; for, without proper packing houses, fruit cannot be successfully handled and put on the market in the condition that the trade demands and the law requires. We in N.S. expect a bumper crop of apples this year.

I have always valued THE CANADIAN HORTICULTURIST and look forward to its arrival each month.—Jas. Kay, Aberdeen, Scotland.

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HAMILTON - ONTARIO

Items of Interest

A meeting of apple growers was held in Meaford, Ont., in June, and a new fruit growers' assn. was formed; pres., A. Gifford; sec.-treas., Dr. Hamel. At the meeting interesting addresses were delivered by T. H. Race, of Mitchell, on the value of cooperation; by J. G. Mitchell, Clarksburg, on a similar topic, and by T. B. Rivett, Toronto, on spraying.

THE HORTICULTURIST has received from Mr. J. W. Bigelow, of Wolfville, N.S., who has been appointed supt. of the horticultural dept. of the Dominion exhibition, to be held in Halifax early in Sept., a complete prize list for the fruit section. Lack of space prevents the publication of this prize list, which is a long one. Several prizes are offered in almost every section, the prices being liberal. Copies of the prize list may be obtained by writing direct to Mr. Bigelow.

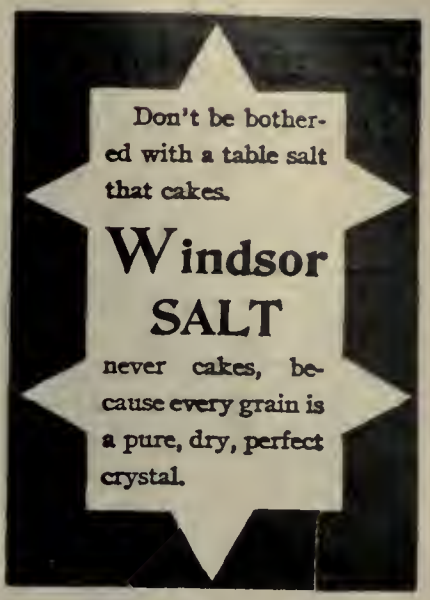
At a recent meeting of fruit growers in the district surrounding Belleville, a committee comprising Jas. Knox, W. S. Morden, Samuel Sills, H. D. Leavens and F. S. Wallbridge, was appointed to arrange for a suitable building in which to pack their fruit this fall. The crops of the various growers will be handled on the cooperative plan. A manager will be engaged to look after picking and packing.

The dept. of physics at O.A.C., Guelph, under the management of Prof. W. H. Day, will continue the work done in helping farmers and fruit and vegetable growers to solve the drainage question. In 1905, Prof. Reynolds, on being requested, visited farms and took drain levels, and advised the farmers as to the best location for drains. The only outlay entailed was in paying Prof. Reynolds' travelling expenses. Several farmers in a locality can make the cost very light by arranging to have each of their farms attended to during the same visit. Applications should be addressed to Wm. H. Day, Dept. of Physics, O.A.C., Guelph.

A number of leading growers in the Grimsby district have formed a co-operative organization for the purpose of handling the products of their orchards to better advantage. The new company is to be known as the Grimsby Co-operative Fruit Growers, Ltd. The officers are: A. G. Pettit, president; A. H. Pettit, vice-pres.; H. G. Roberts, sec.-treas.; and manager, J. D. Biggar. Among others in the company are Linus Woolverton and J. M. Metcalfe. These growers appreciate the value of co-operation and, having had long and practical experience, they may be expected to make the venture a success.

At a recent meeting of the Edmonton Board of Trade a resolution was presented asking for a revision of the regulations governing fruit shipments. It was pointed out that growers in the east did not know what western dealers wanted, and that the latter were not sufficiently protected against fraud. Some claimed that it was the small packers and not the producers who were to blame.

The Dept. of Agri. in Alberta intends to encourage fruit growing. Circulars requesting information regarding age of trees, varieties, etc., have been sent to those who have grown fruit. In future reliable information on these subjects will be supplied by the department.



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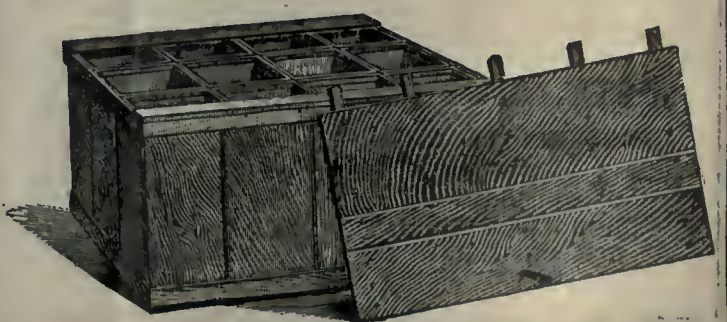

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Niagara District Exhibition

The horticultural exhibition for the Niagara district, which last year was held in Hamilton, will be held this year in St. Catharines, Sept. 14-15. Although still early in the season, indications are that it will be a great success, as marked interest is being shown in the event. At an enthusiastic meeting held in St. Catharines, June 26, all the preliminary arrangements were made. It was announced that the govt. had given a grant of $500, the city council one of $200, and the county council one of $100, making $800, all of which will be devoted to the prize list. It was decided to give $400 in prizes for fruit, $250 for flowers and $150 for vegetables.

The following organizations will be invited to appoint 2 representatives each on the board of management: the Niagara District Peninsula Fruit Growers' Assn., Southern Ont. Fruit Growers' Assn., Jordan Station Fruit and Vegetable Growers' Assn., the Hamilton, Niagara Falls, Grimsby and Burlington horticultural societies, and the township of Grantham and the Hamilton Vegetable Growers' Assns. The Ont. Fruit and Vegetable Growers' Assns will be represented by P. W. Hodgetts and H. B. Cowan, of Toronto, who will also represent the Ont. Dept. of Agri. Several of the organizations mentioned have already appointed their representatives. The St. Catharines soc. will have 7 representatives.

It was decided to pay the expenses of one representative from each of the foregoing organizations when attending board meetings, it being understood that the expenses of the other representative would be paid by the soc. or organization interested. Committees were appointed to draft the fruit, flower and vegetable prize lists, which will be ready for distribution early in July. Committees were appointed as follows: For advertising, and printing, finances and transportation. Mr. W. B. Burgoyne, ex-mayor of St. Catharines, was appointed pres.; Messrs. C. M. Honsberger, of Jordan Station; R. Cameron, of Niagara Falls South, and Jonathan Carpenter, of Winona, vice-presidents; C. A. Hesson, of St. Catharines, treas., and Miss M. M. Tasker, of St. Catharines, sec. All these parties, with the exception of Mr. Carpenter, were present.

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The Canadian Horticulturist

Vol. XXIX AUGUST, 1906 No. 8

Our Fruit Trade With Great Britain

THERE are possibilities for an immense development of our fruit trade with Great Britain.

The conditions under which our fruit is handled by the steamship companies while in transit are, on the whole, very satisfactory.

The great bulk of Canadian fruit shipped to Great Britain is sold by auction in the large cities under circumstances that do not permit of our fruit growers being defrauded to any marked extent.

There is one great defect in the auction sale system of selling fruit. The fruit is sold as fast as it arrives. If several steamers with fruit discharge about the same time the market is glutted and much of the fruit is sacrificed, to the great loss of the Canadian growers. A few days later the market may be almost bare and prices for fruit high. Some arrangement should be made by which the quantity of fruit placed on the market each day can be regulated.

While there are a few firms in London that receive fruit by direct consignment for auction sale that are honest, there are many that are very dishonest. These latter firms defraud Canadian growers right and left. Their reputation for crooked work is so well known around Covent Garden that THE CANADIAN HORTICULTURIST has refused to publish advertisements from them, soliciting consignments of Canadian fruit, although they offered to pay for their advertisements in advance.

Canadian growers should have a representative in London at least, just before and during the fruit season, to act as their agent and look after the disposal of their fruit. This agent could arrange to keep the fruit in cold storage, so that it may be sold when the market was most favorable.

Owing to the fact that a few years ago large quantities of fraudulently packed Canadian fruit were sent to Great Britain (a considerable amount of bad packing is still being done), many large wholesale firms in Great Britain, that would like to buy fruit direct from our growers, are afraid to make the venture. They prefer to buy by auction where they can have a chance to examine the goods before purchase. Were these firms sure they could depend on the quality and packing of the fruit they ordered, they would be willing to buy direct from Canadian growers, thus saving the middlemen's profits that now go into the hands of the commission dealers and auctioneers on the other side. It should be possible to greatly develop this trade so that, ultimately, the bulk of our fruit could be placed directly in the hands of the wholesale and retail buyers.

Canadian fruit, as far as quality is concerned, when compared with the fruit from other countries, stands high in Great Britain. Properly handled, London alone could consume all the fruit Canada is now exporting.

There is great need for improvement in the packing of our fruit and in certain conditions connected with its sale in Great Britain. The first and most necessary step towards improvement is the placing of a man in London to represent Canadian growers. This man should be appointed either by the Dominion Government or by the co-operative fruit growers' associations and the larger apple shippers now doing business in Canada.

BENEFITS THE INDUSTRY

I appreciate highly the merits of THE CANADIAN HORTICULTURIST in fostering the fruit industry all over Canada. I try to profit by the lessons given so liberally.—Auguste Dupuis, Director Quebec Fruit Experiment Stations, Village des Aulnaies, Que.

OUR INVESTIGATIONS

These facts have become evident to THE HORTICULTURIST as a result of the trip to Great Britain made this summer by a staff representative of the paper, with the object of gaining all the information possible, concerning the transportation of our fruit and of the conditions governing its sale in the Old Country.

Our representative was in Great Britain slightly over one month. During this period he spent considerable time in London, Bristol, Liverpool, Manchester and Newcastle, in England; and in Glasgow, Leith, and Edinburgh, in Scotland. The auction salesrooms were visited and sales of fruits from other countries watched. The large dealers, the auctioneers, the buyers, and even the grocers handling Canadian fruit were interviewed. Each and all were asked for criticisms and suggestions.

Enough information of interest to our Canadian growers was gathered to fill several issues of THE CANADIAN HORTICULTURIST. Owing to the importance of this information we have decided to impart it to our readers in a series of articles that will extend over several months. The subjects of the main articles will be: The Auction Sales System of Selling Fruit in Great Britain; Direct Consignments of Fruit to Private Firms; and Suggestions for the Improvement of our Fruit Trade with Great Britain.

WHY OUR MAN WENT

The reason THE CANADIAN HORTICULTURIST sent its representative to Great Britain to gain this information was because it realizes the vast importance of our fruit trade with the mother country, and the need for protecting the interests of Canadian shippers. There has long been a great demand for reliable and complete information concerning our export trade in fruits. While the splendid work that has been done by the Dominion Department of Agriculture, through the initiative of Prof. Jas. W. Robertson, in improving the shipping facilities for fruit in the adoption of uniform boxes and in passing the Fruit Marks Act is recognized, there is a strong feeling that an improvement is needed on the other side, in regard to the manner in which the fruit is disposed of after its arrival. Complaints of fraud have been made again and again in regard to the sale of fruit. It has been claimed that our fruit is not sufficiently advertised, and that there are far too many middlemen handling the goods for the benefit of our growers. To answer these and other statements of a similar nature there has been a sad lack of reliable, definite information. The commercial agents at intervals have made reports, but often it has happened that these reports have conflicted one with the other. Again it has been felt that these agents, with one or two exceptions, have not been

well informed on fruit matters in Canada, and consequently were not in a position to make an intelligent report. In addition, they are supposed to look after so many other matters that fruit can be only a side line with them. For these reasons the spasmodic reports of the commercial agents have not carried much weight with the growers. This has given rise to the feeling that in many respects the interests of our fruit growers are not being pushed the way they should. The industry, it is felt, is not being advertised, both at home and abroad, as it might. The Dominion Dairy Commissioner, who is also the Dominion Fruit Commissioner, visited Great Britain last year. He has made a report concerning the cheese and butter trade, but, so far as we have heard, he has had nothing to say regarding the export fruit trade. Why were the fruit interests overlooked?

It was with the object of gaining information on these and similar points that we arranged to have our representative visit Great Britain. We hope that the information that has been gained will be of value and importance to Canadian fruit growers and that it may lead to much needed improvements being made. While some of the conclusions we have reached may be open to correction, we believe, in the main, that they are well founded. There is one thing, however, on which we are more convinced than ever. That is that the fruit interests of Canada will never receive the attention they need and deserve, at the hands of the Dominion Department of Agriculture, until they have an independent fruit commissioner of their own who will not be forced, when it comes to introducing new lines of work, to first gain the approval of the dairy commissioner or the head of any other branch of the government service. The first of the reports by our representative will be published in our next issue. It will deal with the conditions under which perishable products are handled by the steamship companies. The reports to be published in subsequent issues will deal with questions of similar importance.

Picking and Packing Peaches

THE opinion is held by many growers that peaches should be picked on the green side of maturity to ensure the best keeping quality. Investigations show this opinion to be erroneous. Experience teaches that peaches keep best when picked fully mature, yet not ripe. The proper stage of maturity is when the peach is well colored, full grown, but yet firm, and when the ground color takes on a faint yellowish tinge.

After green peaches are picked, the process of ripening proceeds more quickly than in the case of more mature specimens of the same variety, and the chemical changes that are constantly taking place within the fruit progress rapidly. Green picked fruit, therefore, reaches the end of its life in storage or in the refrigerator car as quickly, or even more quickly than the latter. Furthermore, peaches that are picked too green will shrink rather than ripen; poorly colored, shrivelled peaches bring the lowest price; they do not attract the customer; they never acquire that fine quality, or that aroma that is characteristic of highly colored, well-matured specimens. Last season, peaches that were altogether too green were shipped to Winnipeg.

Oftentimes we see peaches, originally high grade, showing the effects of bad handling. This condition may be due to poor methods of picking or to subsequent rough handling in the packing-house or on the market stand. When picking peaches, the picker must be careful not to grasp them too tightly, or he will bruise them and cause them to become discolored. Peaches should be placed in the picking basket with much more care than is usually practised. Fruits of all kinds, should be touched by the hands as little as possible, for every evidence of such handling detracts from both their shipping and market value.

A Crate of Select Georgia Peaches

A six-basket carrier of Elbertas, showing a 2-1 pack. The photo was taken in the great Hale Orchards, of Fort Valley, Ga., by Mr. G. Harold Powell, Department of Agriculture, Washington, D.C.

GRADING AND PACKING

The successful transportation of peaches depends largely upon the manner in which they have been sorted and packed. Pressure of space forbids more than a passing mention of some ideas on these points. A word in particular for the benefit of those, and there are many, who practise packing peaches on end. This system of packing is almost universal in our peach districts.

The point or apex of the peach is the most tender part of the fruit, as it ripens first. When peaches are packed on end, they are apt, almost sure, to become crushed through pressure of the upper layers and, when the baskets are piled, by the weight of the upper tiers. This bruising of the tender end of the peach hastens decay and is one reason why promising, well-selected specimens sometimes fail to reach their destination in good condition.

Peaches should be packed on their sides and packed firmly to prevent change of position and bruising while in transit. The rosy cheek of the peach should be placed uppermost, and all the peaches in the package should point the same way. Some growers may contend that peaches cannot be packed on their sides in the 11-quart basket. Even so, it is not the fault of the peach; it is the fault of the basket.

THE CLIMAX BASKET

The Climax basket is a satisfactory package for some kinds and grades of fruit, but for all classes and grades that require systematic packing, or "laying up" as some persons call it, it is not to be compared with some of the styles of packages used in the United States

A Useful Branch of the Service in the British Columbia Fruit Industry

(Photo furnished by Mr Maxwell Smith, Dominion Fruit Inspector, Vancouver.)

The unsuitableness of the Climax basket for fancy packing is, probably, one of the reasons why peaches are usually packed on end. The sides and handles are not sufficiently rigid to admit of any pack other than what would be termed in Georgia or California a straight 4-4, three layer pack. This is the simplest of all the peach packs, and, apparently, is the only one known to many of the packers in the Niagara district. The cause is easily found.

While a score of different packs can be put in the Climax basket, the foregoing is the only one that can be reasonably expected to keep its place. The practice of spreading the handle when the cover is put on, loosens the fruit and, as a consequence, a fancy pack would be spoiled. Even the customary 4-4 pack often reaches its destination in a disordered state. The Climax basket is objectionable also, in the fact that the flimsy leno cover permits tampering with the fruit. It also allows dust and dirt to enter. Still, the Climax basket is the accepted package, and it rests with the fruit grower to make the best of it.

The time will come in Ontario, however, as it has in nearly all the States across the line, when better packing and a better package will be demanded for the best class of peach trade. Personally the writer would recommend the adoption of the six-basket carrier, shown in the accompanying illustration.

THE SIX BASKET CARRIER

It is light and strong, holds three-quarters of a bushel, gives good ventilation, is neat in appearance, and with the divider, six baskets and cover, the cost is not great. It is put together with strong wire staples, well clinched on the inside. The panel heads afford a sure grip to the hands, and damage from breakages rarely occurs. When loaded in cars, the shape of the package permits a perfect fit; the tiers are separated for ventilation by means of inch slats tacked across the ends of the package. The HORTICULTURIST would like to hear the opinion of peach growers regarding this package as a substitute for the Climax basket.

Bud Orchard Trees in August

The usual time for budding is in August, although it may be done any time during the growing season, when the bark peels easily. Top budding is an important operation in the secondary cure of orchards. Varieties that have been planted and found not suited to local and climatic conditions, or to the demand of the market, may be worked over by means of budding with some variety of desired merits. It may be employed to reform the tops of trees that have been found not true to name.

The process is not a difficult one. Buds of the desired variety are taken from vigorous growing, healthy shoots of this season's growth. If selected from bearing trees of known worth, so much the better; there is less danger from degeneration—purity being ensured—as such a practice tends to breed up rather than down. The upper buds on the shoot usually are discarded, as are those at the lower end. The remaining portion of the shoot is termed a "stick." The leaf blades on this stick are then removed, but the petioles are left to serve as a handle for the buds, which are located always in the axils of the leaves. When the sticks are thus prepared, they should be placed, butts down, in a bucket of water, and covered so as to keep them fresh. They should be used as soon as possible.

The budder takes a shield-shaped bud from the stick, and inserts it in a T-shaped incision which he has previously made on a limb of the tree that is to be budded. A ligature of string or raffia is then applied, with moderate pressure, to hold the bark firmly over the bud. In about two weeks the buds should be united, and the bandage may be removed. The buds should remain dormant over winter. In spring, as soon as the buds show signs of growth, the top of the stock must be cut back close to the bud. By this means, a new and profitable top may be secured in a comparatively short time.

Very few apples are being planted in this district. It is claimed that this section is better adapted to the more tender fruits, and that the apple section will be found more largely in the northern and eastern counties in the near future, if not already there.—W. H. Bunting, St. Catharines.

We have set out several acres of orchard during the past few years. In purchasing the stock we had nothing to do with agents, we found greater satisfaction from dealing direct with reliable nurserymen.—W. H. Crews, Trenton.

Handling Apples for Export*

R. W. Shepherd, Montreal, Que.

IN Quebec the leading and most profitable apples are Fameuse, McIntosh Red and other highly colored and highly flavored varieties that are of delicate texture. They are too delicate to be handled in a blundering, slipshod fashion, if the best prices are to be realized. The way the finest Fameuse apples are handled from the time they are picked until they are shipped, would cause one to think the fruit was as hard as a Ben Davis or Lawver, instead of being an apple with the thinnest of skins and the most delicate texture of flesh.

The picker's baskets should be lined with burlap or something similar, and the pickers should be taught to handle the fruit like eggs. Packing tables with coverings of canvas, instead of boards, should always be used and the full baskets emptied carefully. The sorting and packing is best done in the orchard, as by that means the fruit gets less handling and is less knocked about. There are occasions when it is expedient to put fruit intended for boxes into barrels (with a little hay or straw in the bottom of each barrel) and the barrels can be carried in a spring wagon to the fruit house to be packed in boxes the next day or on wet days. The best plan is to put Fameuse apples in the export packages as soon as possible after picking.

When the packing is done, it is advisable to store the packages without delay in some cool place for a week or 10 days. My plan is to put all packages, whether cases, boxes, or barrels, in cold storage for a few days before shipping. This is one of the principal essentials to successful and profitable exportation of the finest Quebec apples. Frequently we have warm days in the month of October, when the thermometer runs 70 to 75 degrees. How can apples reach the other side of the Atlantic in good order if they are picked and packed in a temperature of 70 degrees, kept in a warm shed for a week or two, and then put into the warm holds of vessels to be kept there for 10 or 12 days? If the fruit is thoroughly cooled before shipping, it will arrive at the English market in fine condition.

It is most important that the fruit should be in good condition when it leaves. It costs money to put it in cold storage, but it pays to do so. It pays to do it most years even with No. 2 Fameuse packed in barrels. I have proved it repeatedly. Last season No. 2 Fameuse and Wealthy, sent to Quebec market, realized $2.00 a barrel; but the same fruit, after having been 10 days in cold-storage and shipped to Glasgow realized 15 to 16 shillings a barrel, which is equal, after paying all expenses, to $1.10 to $1.25 over the net prices on the Quebec market. Hundreds of barrels of No. 2 Fameuse were shipped last season from Montreal to England and Scotland to be sold at three to six shillings a barrel. This is shown by the market reports. This great loss was caused by the fruit being carelessly handled, carelessly packed and shipped in a heated condition. The fact that prices on the other side are high, as they were the past season, is no reason why blunders should be made in this foolish fashion. Nothing but loss can follow such practice, whereas, if a little more care and intelligence were exercised, the results would have been a handsome profit.

The use of cold-storage prior to shipping apples is not advocated because I

The Shepherd Apple Case

am interested, either directly or indirectly, in any cold-storage company, but because of practical experience, which has shown the advantages derived from thoroughly cooling fruit before sending it to England. With apples of hard texture (winter apples) this precaution is not so necessary. Many large exporters say that the trouble and expense is too great and that in many cases it is utterly impracticable. My experience has proved that apples cannot be shipped year after year without the shipper noticing the advantages derived when fruit arrives on the other side in good condition. The commission men soon let you know if the barrels are wet, slack or damaged in any way.

Wet condition is caused by shipping the fruit in a heated state; slackness may arise from bad packing or because of some of the fruit becoming bad, causing a shrinkage, which makes the fruit move in the barrel. Apples that are not handpicked and sound should not be shipped in a No. 2 barrel; in fact, as much care should be taken to pack a barrel of No. 2 apples as a barrel of No. 1. Canadians use great intelligence in handling and packing bacon, cheese and butter, but, with few exceptions, the same careful attention is not paid to our apples.

*A paper read at the annual convention of the Pomological and Fruit Growing Society of the Province of Quebec, held last December.

Root Pruning Fruit Trees

There are times when root pruning is of value in the successful culture of fruit. When the trees are growing luxuriantly and producing wood at the expense of fruit, the practice of root pruning will tend to check growth and promote fruitfulness. The operation is not difficult, nor dangerous when rightly done, but the beginner should start on a small scale or employ an experienced man to do the work for him.

The operation consists in digging a trench around the trees at a distance of three to eight feet, according to the size of the trees, and chopping off most of the large roots. Good judgment is required in the work. Too much mutilation of the roots might give disappointing results. Enough should be done, however, to check vitality. The trench should be refilled, and, if convenient, with poorer soil than was taken out.

The best time for root pruning is in August. It may be done earlier in the season, but the object of root pruning—the change from wood buds to fruit buds—is effected better at this time than any other. Root pruning may be practised, also, on trees, even shrubs and bushes that are susceptible to frost and winter injury. By checking the growth, they will endure severe weather without injury.

Prune Raspberries in August

W. G. Horne, Clarkson Ont.

The raspberry, when planted on well-adapted soil, is, perhaps, as remunerative as any fruit we grow. With ordinary cultivation, and manuring every second year, a patch, once established, may stand twenty years or more. I have one that has been picked 16 years and this year it is fruiting as well as ever.

Many growers neglect their raspberry patches. After the crop has been gathered the bushes are left often without care until the next spring. On this year's canes is borne next year's crop. Cleaning out the old canes only when convenient is not good practice. The old canes should be pruned out as soon as possible after the picking. They are far easier to cut at that time and it is better for the new cane.

Topping off the canes had better be done in the spring than early fall. Young shoots that grow from fall topping generally winter-kill. Raspberries are being planted more and more each year. The best all-round variety is the Cuthbert.

Geraniums for Winter Bloom in House or Office

W. T. Macoun, Horticulturist, Central Experimental Farm, Ottawa

THERE are few plants which can be made to give greater satisfaction during the winter months than the geranium, for if the plants are properly cared for and the conditions of temperature, light and sunshine are favorable, abundant bloom may be obtained from early in the winter until

Geraniums in Bloom

This photo was taken from the outside of the Horticulturist's Office, C. E. F., Ottawa, and shows the appearance of the bloom to the passer-by.

(Photo by F. T. Shutt, C.E.F., Ottawa)

it is time for bedding out in the spring. The geranium suffers less from insects and fungous diseases than most house plants, which is another inducement to cultivate this beautiful flower. Anyone who has a suitable window in his house or office can obtain abundant winter bloom if the following treatment is given: This method refers only to old plants that have been in the house all winter, or in the bed all summer, and is recommended for those who do not wish to take time to care for the plants in pots.

Plants that have been blooming all summer are usually too large for transplanting into pots in the autumn, or if not too large are too "leggy" from being grown close together in beds. But, for the average person, these are the most available, and they may be treated in such a manner that good results will follow. In order to make the plants stocky and of good shape, and capable of producing abundant bloom, they should be pruned back to within six inches or less of the ground about a month before the plants are likely to be killed by frost. If they are not well headed back they will be leggy, as buds will only break from the upper parts of the stems. By the time there is frost, shoots will have broken along the old stems and the plants will bloom sooner than if the pruning is left until they are put in pots.

We have had the best results from the use of rather large pots, six inch giving good satisfaction. While bloom may be obtained a little earlier by using smaller pots, the plants have to remain in them so long—from September to May—that they become pot bound, and are not satisfactory or sightly in late winter and early spring when flowers are much appreciated.

The soil for the pots should not be very rich, as plants will make vigorous growth in comparatively poor soil, and will bloom sooner. The mistake is too often made of using rich soil, resulting in a large amount of sappy growth, with few or no flowers. It is from the firm or partially ripened wood that the best bloom is produced. Good loamy soil with enough sand mixed with it to make it rather open will be found quite satisfactory. It should not be of such a character that it will bake, for after watering for several months, unless the soil is of the right texture, the surface becomes hard and the plants do not thrive well. When the plants are dug it is usually necessary to reduce their size so that they will go nicely into the pots. The roots, also, may be shortened in, so that they will not be crowded in the pot and so that the plant may be set well down; as the lower it is in the pot, the less leggy the plant is likely to be if the shoots do not come from the lower part of the stem. The soil is made firm about the plant, and the pot filled with soil to within about half an inch of the top. The plants should now be well watered and put in the shade for a few days, after which they may be placed in the window where they are to remain, and here it may be said that light and sunshine are absolutely essential if satisfactory results are to be obtained, hence a southern window should be chosen and the plants put as near the glass as possible. A cool room is much better than a warm one for geraniums. In a warm room the plants grow beyond bounds and do not bloom well.

One of the greatest mistakes made by many who grow plants in houses is that too much watering is done. The geraniums will not make much growth for several weeks after planting, and during this time they should be given comparatively little water—just enough in fact to prevent them from becoming dry. At no time should the soil be soaked, as much water will tend to make sappy growth with few flowers. Each pot should be treated individually, when watering, and the plant watered only when it needs it. Too often all the plants are watered at the same time, and at regular intervals without regard to the needs of the individual plants. Some plants do not need as much moisture as others, as they are not making as thrifty a growth and do not transpire so much moisture. Plants should not be watered until the surface of soil has become dry.

It will be necessary to do some judicious pinching back of the new growth early in the winter when the plants are growing thriftily, to induce them to throw out additional shoots, as the more shoots there are, the more bloom there will be later on. One should sacrifice some of the earlier blooms rather than neglect pinching back, as a plant well covered with bloom is so much more satisfactory than one with only one or two trusses, even though obtained earlier.

Geraniums in Bloom, inside view, Horticulturist's Office, C.E.F., Ottawa

(Photo by F. T. Shutt, C.E.F., Ottawa)

The time when the geraniums begin to bloom will depend very much on the time when they are cut back the previous summer and on the variety, but if judiciously planned there should be bloom from January until May. Some of the most satisfactory varieties for winter bloom are: Jacquerie, Cardi, Phyllis, Lilian Duff, Dryden, Severin, Gettysburg, although there are many others which succeed almost equally as well.

Three Good Begonias for Hanging Baskets

A. Alexander, Hamilton

IN this large genus of greenhouse plants, the three, of which illustrations are given, have been found very satisfactory for hanging baskets in an amateur's greenhouse. They are growing

Begonia, "Mary"

in wire baskets about 18 inches in diameter. The baskets are lined with sphagnum moss, and they are growing in a soil composed of equal parts of loam, rotted leaves and decayed hotbed material and a few handfuls of

Begonia Manicata

clean beach sand, the whole put through a fine sieve. They were in bloom, as shown in the photos, from the middle of April to the beginning of June, and made a very fine display in the house.

I am not quite sure if "Mary" is the correct name of the one so called. Its leaves are nearly round, of a rich olive green on the upper side and reddish underneath. It sends up an immense number of slender, delicate pink colored flower stems, each with great numbers of rosy pink blooms.

"Manicata," whose foliage is not so striking as its cousin "Manicata aurea," is a more profuse bloomer. Its habit and color of stem and flower is very similar to "Mary."

"Paul Bruant," which, when young has some tendency to adopt the upright habit, when growing in a basket seems to know what is expected of it, and gracefully leans over the sides with its very elegant foliage so beautifully cut and sends out its heavy bunches of bloom, which are beautiful in every stage of their development.

After blooming, these plants are hung outside under the shade of an apple tree during summer. About the beginning of September some fresh soil is added, and they are again hung in the greenhouse. The plants shown have been in the same baskets for two years.

Begonia, Paul Bruant

Wild Orchids of Canada

"Orchids can be found in Canada by the thousands," said Mr. Thos. Manton, of Eglinton, recently to a representative of THE CANADIAN HORTICULTURIST. "Cypripedium spectabile, Cypripedium acaule, Cypripedium pubescens, and Cypripedium parviflorum," said Mr. Manton, "are very common in the valleys of the Trent river, in Muskoka, in the lagoon between Port Arthur and Winnipeg, in New Brunswick, and in Northern Quebec. They can be found as near Toronto as Holland Landing and Bradford.

"The best success can be had with these plants by collecting them immediately after they are done flowering," said Mr. Manton, "or by marking the spots where the plants were located, and digging after October 1. Spectabile and acaule do not thrive under ordinary house culture. For forcing it is advisable to dig them in October and plant them in pans as close together as the crowns can be placed, or in pots well drained and containing an abundance of sphagnum moss. They should be put in cold frames where they can be got at when wanted. By putting them in the greenhouse two months before Easter, bloom can be had almost equal to the tropical orchids.

"These wild specimens do exceedingly well in the open garden if they are given plenty of moisture and leaf soil or sphagnum. It is advisable to have them shaded from the afternoon sun, but they need full light. Nearly every hardy plant nurseryman in England and in other European countries catalogs Cypripedium spectabile and Cypripedium spectabile alba, and offers them at prices that prove they can be grown successfully. Almost all collections of herbaceous plants in England contain specimens of these."

THE CANADIAN HORTICULTURIST would like to receive photographs of unusually pretty window boxes, flower gardens, or plants and shrubs of unusual size covered with bloom. If you have any favorite spot in your garden that is worth photographing give THE HORTICULTURIST a chance to enjoy it.

Lawn and Garden Notes for August

IN the home garden and on the lawn during August many bad weeds will be trying to go to seed. When a weed matures seed, it produces a lot of them. Many thousand seeds may come into existence from one plant. Weeds are constantly trying, not to outwit, but to outwork the amateur gardener. They are determined workers, persistent and indefatigable. They are, however, not invincible. Constant clipping or spudding on the lawn, and hoeing in the garden, will keep them within bounds.

TESTS FOR MELONS

Melon time is coming. The person who buys a muskmelon or a watermelon should know how to choose a good one. The first point in judging a muskmelon is the weight. A heavy melon is a good melon, but it also must be ripe. One of the best tests for ripeness is the odor. A ripe melon is tempting, fragrant and spicy. A sound, sweet melon usually has a rough surface and deep furrows. The color between the furrows should not be too green, or it will be underripe, nor too yellow, as it will be soft and mushy.

A watermelon also should be heavy. A ripe watermelon will sound hollow when thumped with the knuckle, but this is only practicable in the early morning, for the same resonance is noticeable in a large, unripe melon during the heat of mid-day sun. If the "belly," or lower surface, is yellow and blistered the melon is ripe. Pressure on the melon to hear it crack within is objectionable, as it injures those that are ripe as well as those that are green.

THE KITCHEN GARDEN

Nearly all seedsmen issue special summer catalogs. Why not send for one and see what can be sown in the garden in August, so as to have fresh vegetables for the table as late as October and November?

String beans, early maturing peas, flat early turnips, radishes and other quick growing vegetables may yet be sown. If sown at once, in southern Ontario, there is still time to grow small cucumbers for pickles. These are always a delight to the thrifty house-wife, and are more than relished during the cold winter. Try some this year.

As the seasons for greens is about over, why not force the season and plant beets for autumn greens? Select some good variety of quick maturing qualities. Young beet leaves will be relished late in the season.

Blanch the early crop of celery, which now should be well matured.

Corn Salad is something everyone should grow for salad next March and April. Sow about the first of September in drills half an inch deep, and six inches apart, in rich ground. As the plants are for cutting when young, the seed may be sown pretty thin. Before the cold weather sets in, protect with clean straw. It is cut during early spring for salads, and as such is most excellent.

If sown in August and left undisturbed till spring, salsify will be twice its ordinary size. The culture and care given it should be about the same as that given carrots. Before sowing, soak the seed for 12 hours in warm water.

Lettuce may be sown for growing in hotbeds or cold frames for Thanksgiving. If the weather is fine it may be grown in the open, but late lettuce is safer in the cold frame. Sow seed in the open and transplant later.

Make a cold frame if you haven't one. Experiment with it, and get nearer to Nature. It is an easy method of securing home-grown vegetables in late fall when they are too expensive to buy in the markets, and unobtainable in any other way. Lettuce, spinach, radishes, and many things may be grown. Give THE HORTICULTURIST the benefit of your experience later, and also send along a few photographs.

Chevril is a vegetable unknown to many of our readers. It is a very rich herb, similar in growth and flavor to parsley, and should be found in every kitchen garden. It is sown and treated like parsley. Sown in late August, the seeds lie dormant till the following spring. The roots are boiled or eaten in stews, much like carrots, but of a vastly different flavor. Plant now; do not delay until next spring. The seeds, when kept dry over the winter, sprout very poorly, or not at all.

If you have too many onions in August from spring sowing, the small bulbs may be harvested and kept until next spring as sets for early planting. Welsh onions being grown for their leaves only, should be sown in August or September for salad or seasoning in early spring.

If the weather is hot during August keep the soil in the vegetable garden well stirred to prevent evaporation of moisture. Add water frequently and cultivate as soon afterwards as the soil can be worked.

AUGUST WORK WITH INDOOR PLANTS

What would be nicer than to have Bermuda lily blooms at Christmas time? Long look ahead. Better start them now and you will not regret it. Roman hyacinths and paper-white narcissi also are grown easily for Christmas. Pot the bulbs in August, water once, and plunge them in a frame or in the cellar. Cover with coal ashes and see that frost does not reach them. In about six weeks they may be brought into the light. The season of bloom may be lengthened by bringing only a few pots into the light at one time.

If early flowering freesias are wanted, plant a few bulbs about the last of August. Put four or five bulbs in a four inch pot. Use ordinary good potting soil. Water thoroughly the first time and repeat only when the soil requires it. Keep the pots outside in semi-shade until the middle of September, then remove them to the house.

Sow primroses, cinerarias and calceolarias now. These will repay your trouble and expense by giving a profusion of bright-tinted flowers.

If young plants of coleus, heliotrope and geraniums are wanted for the winter now is a good time to strike the cuttings.

Petunias for winter bloom may be had from those outside by cutting them back to within a few inches of the roots. Two weeks later pot them into small sized pots.

ASTERS

Early asters bloom in August. Seeds that were planted in Toronto this year in March produced bloom on July 10, These were given a rich mellow soil which produces large flowers on long slender stems. Asters will grow fairly well on rather light soil, even if not very rich. Should rust attack the plants spray with ammoniacal carbonate of copper. If the weather is very dry during August, flowering asters should be well watered.

Why not transplant some of the wild species of asters to the perennial borders in your garden? These conspicuous blossoms in the woodlands and fields are boon companions to golden rods in form and color, but surpass them in brilliancy. When transferred to the garden border they become particularly attractive and the flowers grow much larger and more profusely. They can be transplanted with safety either in fall or early spring, and will establish themselves to their new surroundings with little care.

PARASOLS FOR PEONIES

To protect peonies from the scorching sun of August, an amateur we know gives each a small Japanese parasol, the handle of which is pushed into the ground near the root of the plant. This shades the plant during the middle of the day, and can be taken away at night; in the early morning it can be replaced over the plant.

TO REVIVE CUT FLOWERS

Cut flowers are constantly sent by express and through the mails, but seldom in such a fashion as to preserve their bloom and freshness. To revive them, put them into warm salt water, to which has been added a few drops of sulphate of ammonia.

RENEW PANSY PLANTS IN AUGUST

An excellent way to keep up the stock of any good varieties of pansies is by

taking the old plants during August and cutting off the young shoots which are around the base, many of which you will find already supplied with roots. Plant them in a small prepared plot of rather sandy soil in a shady place. Keep them well sprinkled, and they will soon root and make vigorous plants to put in winter quarters, ready for next spring.

Pansies may be grown from seed. For April bloom, sow now in cold frames. Bellis, or English Daisy, may be grown similarly.

CUTTING FLOWERS FOR EXHIBITION

Flowers cut for exhibition purposes should be immediately placed in a pail or large jug of water and put away in a cool place until taken to the exhibition. Cut them early in the morning on the day of the show, before the sun shines on them very much.

KEEPING CUT FLOWERS FRESH

Cut flowers, when properly treated, can be made to look fresh for three or four weeks. Every night take them out of the water and thoroughly rinse the stalks under a faucet, removing with the fingers any decomposed matter. Then put them to bed for the night in a basin of strong soapsuds, but be careful not to allow any water to touch the blossoms. The soapsuds supply a certain amount of nourishment. In the morning rinse the stalks under the water again, and as each blossom is arranged for the day in the vase of fresh water, snip off a tiny portion of the stalk with a pair of scissors. Always carefully trim away any faded part. Food for the day is supplied by sulphate of ammonia, a few drops of which should be added to the water put in the vase. At night put the flowers into some dark cool place - say a pantry, as it is not good either for the flowers or for the household that they should remain all the time in the living rooms.

BUDDING ROSES

The tops of undesirable rose bushes may be changed by budding. August is the best time to do the work. At this period the bark of nearly all varieties peels with greater facility, making it easy to insert the bud. Near the base of the new growth make a T-shaped incision. Into this insert a shield-shaped bud cut from a new shoot of the desired variety. Tie the bud with string or raffia. In two or three weeks the raffia should be cut. The bud remains dormant during winter. In early spring the stock should be cut immediately over the bud, so that the flow of sap will be thrown into the bud and force its growth as rapidly as possible.

A Chinese Wistaria in Hamilton

THE PURPLE BEECH

If your newly-planted blood-leaved beech fails to put on its darkest hue the first season, do not blame the nurseryman for not selling the proper kind. The first leaves of the purple beech, after transplanting, are a light copper color. It is only after it is well established that the full dark purple color comes.

PLANTING EVERGREENS IN AUGUST

Many expert gardeners believe that more evergreens are injured by summer heat than by winter cold. Spring planting is the customary practice, but if followed by a summer drought it is often disastrous. Planting in late fall is not advisable, because the evergreens do not become firmly established before winter. The best time to plant is, perhaps, in August, but see that the roots are well protected from exposure to sun and wind. The evergreens will have plenty of time to become settled before winter, and you will avoid the annoyance of spring delays.

PREPARE FOR FALL MULCHING

Lawns should be mulched in the fall, and now is the time to prepare the material. The common practice of using coarse stable manure is objectionable; it is unsightly, foul-odored, and introduces weed seeds. A more effective and lasting mulch for lawns is one recommended by Wm. Hunt, O.A.C., Guelph. It is an earth mulch, composed of equal parts of good clean soil and well-rotted stable manure. The materials should be obtained in August and turned over occasionally until October, then spread on the lawn.

Wistaria Chinensis

In August and September, depending on the locality, the Chinese wistaria produces a wealth of bloom and presents a lovely picture to the passer-by. The one in the illustration is to be seen at the residence of Mr. R. A. Lucas, of Hamilton, Ont. It is Wistaria Chinensis cœrulea, and is over 20 years old. With its graceful racemes of lavender flowers hanging in profusion from the almost leafless branches, no climber is more tender in color or more beautiful. It is one of the few vines that will twine around large supports, pillars of verandas or arbors.

At one time Mr. Lucas' wistaria used to grow close to the wall of the house, but the sun burning the young leaves and tendrils, it did not thrive. It is now on a trellis, 10 inches from the wall, and is growing vigorously. The wistaria, illustrated, blooms profusely for about two weeks. The length of the season of bloom depends on the weather; when the days are bright, dry and calm, the bloom is more lasting. A warm soil and a sunny position are the conditions most desirable for the production of flowers. A severe pruning when dormant, cutting back the previous season's growth to about two buds, except where vacant places require filling, is necessary also to ensure freedom of bloom the next season.

There is nothing more graceful than the silky blooms of the single poppies nodding on the apex of their long wiry stocks like some tropical butterflies that a passing zephyr might waft from their airy perches.—N. S. Dunlop, Floral Dept. C.P.R., Montreal.

Vegetables for Exhibition Purposes*

THE culture of vegetables, at all times a most interesting study, becomes more so when the object is the exhibition table. As exhibitions at which vegetables figure prominently are held principally in the fall, I shall confine these few remarks mainly to those varieties that are in season at that time of the year. Now we will say the exhibitor wishes to take a collection of 12 varieties which is ample to test any person's skill. The following is a good selection for a dozen varieties: Celery, leeks, onions, potatoes, carrots, beets, cauliflower, parsnips, turnips, tomatoes, brussels sprouts, lettuce, or, should string beans, peas, sweet corn, or egg plant be available they would give a larger selection.

The varieties chosen should be good types of their respective sorts. I do not care much for the squash family as exhibition vegetables. They represent no extra amount of skill in their cultivation. Anyone can grow squash if they have a manure heap. The same applies to other kinds that do not represent much skill. The different sorts of spinach, including Swiss chard, which I do not suppose one person in a dozen would eat if anything else were available, also salsify and Jerusalem artichokes, do not figure very high as exhibition vegetables.

I have placed celery at the head of my list of 12 varieties. There is no vegetable that calls for more skilful cultivation than first-class celery. It should be large, without being pithy, or hollow, have a good-sized heart, be well bleached and free from rust and blemishes. A good time to sow seed for the produce to be in good shape late in October is in early May. I prefer to sow in boxes and place in a greenhouse in gentle heat. When ready, prick out into cold frames or anywhere in four or five inches of soil on a hard bottom where water is handy, as they require lots of it. The plants will be ready for the open ground by June 15, and no opportunity of a showery day or so should be lost in getting them out. If the weather is dry, water must be given in abundance if good results are expected.

Large onions and leeks are exhibition vegetables and the culture is practically identical, except that the leeks require earthing up to blanch them. Onions and leeks cannot be too large for show purposes, and to produce large roots very early sowing is indispensable. February is none too soon to sow in heat in a greenhouse. They must be pricked off into boxes when large enough to handle and kept growing on, gradually hardening off and planted out in very rich soil in the garden in May. These plants are very gross feeders and must have very high cultivation to bring them to a high state of perfection.

Potatoes for exhibition should be of medium size, clear in the skin and have shallow eyes. Very large specimens are more than likely to be hollow in the middle. Carrots and parsnips must be large and have very clean skins and uniform tapering roots. Beet roots and turnips should be of medium size, inclining to small rather than large, as big specimens of these are useless unless it is for cattle feeding.

Cauliflower should be of medium size with very close and clean white heads. Tomatoes must be of medium size and very round, not corrugated, and should be ripened on the plant. Brussels sprouts, a very telling vegetable when good, should be large and solid, not open and ragged. Lettuce also must be large and very solid. Needless to remark, the whole collection should be presented on the exhibition table as fresh as possible and no pains should be spared to keep them so, for if wilted or stale in any way, it would go strongly against them.

Now as to manner of staging. The collection should be made as artistic as possible, not merely a dish of each kind placed on a bare table in straight lines. This method does not appeal to me. Instead, a background should be formed of the larger kinds and the smaller grouped in front of them; no receptacles such as dishes, etc., are necessary. The group should be nicely trimmed off with fresh parsley. It is surprising, with the exercise of a little ingenuity in arrangement, what a beautiful effect can be produced even with a collection of vegetables.

*Extracts from an address read before the Morris Co. Gardeners' Society, New Jersey, by John Heeremans.

Bean Blight and Bean Rust

IN July, THE HORTICULTURIST published a portion of a bulletin on bean diseases recently issued by Prof. H. H. Whetzel, of Cornell University, Ithaca, N.Y., Bean Anthracnose was thoroughly discussed. The following extracts on bean blight and bean rust, taken from the same bulletin, also contain valuable information for bean growers.

BEAN BLIGHT

"The blight is a bacterial disease. It is caused by a minute parasitic plant (*Bacterium phaseoli*) in form and habits of life quite unlike the anthracnose fungus. These tiny bacteria have no mycelial threads and no spores. Each little cell is a plant in itself. The first evidence is usually to be observed in the leaves. These show large brown dead patches, often spreading through the entire leaf. When wet, the spot is soft and watery, but when dry, becomes papery and brittle. On a badly blighted patch the leaves become dry and curled, as if scorched. Judging from some observations made last season, it seems likely that insects are in most cases the agents by which this disease is carried from plant to plant.

"Through wounds or by way of the stem the bacteria find their way into the pods which, if young, may shrivel and die. In the larger pods they produce spreading watery spots which finally become more or less discolored but never sunken and black as in the case of the anthracnose.

TREATMENT OF BLIGHT

"No method of treating the seed to prevent the blight has yet been proposed and properly tested. Professor Barlow, of the Ontario Agricultural College, Guelph, has demonstrated that the bacteria are readily killed by exposure for 10 minutes to water heated to 122 degrees Fahrenheit, while dry beans can endure such a temperature for some time without injury. While this gives some promise of success the treatment is open to many of the objections raised in the case of the anthracnose.

"The sorting of seed affected with blight is very questionable. Owing to the fact that blight-affected seeds are often not discolored, it is manifestly impossible to sort them from the healthy ones. The safest method is to discard all seed known to have come from fields that showed the disease.

"In regard to destruction of diseased tops and rotation, Professor Barlow says: 'A field where beans have sickened with this disease is unfit for growing beans for at least one season, as the germ lives over at least one winter in the stems and leaves left on the ground. How long such a field may remain infected is unknown, for we do not yet know whether the germ can live and increase in the soil where no beans are growing, although this is probable. Bean straw from infected fields may be burned. If it is fed to animals or used in bedding, the

manure should be returned to the field on which the beans grew, and not spread on fields free from the disease.'

SPRAYING

"At the New Jersey Experiment Station, Dr. Halsted has experimented for a number of years with several spray mixtures for the prevention of bean blight. The Bordeaux mixture of the strength recommended for the anthracnose has been found to be very satisfactory. Probably a larger number of applications will be necessary for the blight than for the anthracnose.

BEAN RUST

"The true rust of beans is, like the anthracnose, a fungus disease. It differs from the anthracnose, however, in many important respects. The most important difference from the grower's point of view is that it is a much less common and destructive disease. It occurs only on the leaves of the bean, rarely on the stems and pods. Except in very severe cases, it does not materially injure the leaves.

TREATMENT OF RUST

"While this disease is not common and is rarely destructive, yet it is desirable that it should not become well established on a farm. Under very favorable conditions it might become sufficiently abundant materially to injure the crop. Therefore, it is well to learn to know it and so be able to stamp it out whenever it appears. Since the disease winters only in the diseased tops, it is readily exterminated by burning all diseased plants after the beans are harvested. When beans are sprayed for anthracnose this disease will also be controlled."

Muskmelons

W. G. Horne, Clarkson, Ont.

In a recent issue of THE HORTICULTURIST, Mr. Emory, of Aldershot, complained of the shipping of green melons to market. The Toronto melon market has been almost killed through the sending of melons that were hardly fit for pigs to eat. To grow good melons, the land must be rich, warm and sandy. Cultivate well as long as growth of the vines will permit; after that, don't interfere with the vines. When gathering the crop, avoid tramping on the vines. The fresher the vines the better the flavor of the fruit.

Many people do not know when a melon is ripe. When ripe, a crack will form around the stem, which will cause the melon to fall away when the stem is touched. For long distance shipping, melons may be pulled as soon as the crack around the stem is visible. When pulled then, however, a little of the flavor is lost. Melons won't ripen off the vines; they will turn yellow, but tasteless. The favorite melon is the Rocky Ford.

Growing Dutch Set Onions

J. W. Rush, Humber Bay, Ont.

THE plan I adopt for growing Dutch set onions is as follows: I select a very rich piece of ground, that had grown beets last season, as land suited for early beets is suited for Dutch set onions. Then I apply a light dressing of well-rotted manure at the rate of 50 tons per acre. Plow this under seven inches, then harrow with the Acme harrow, which both levels and crushes the soil into tilth and puts it in good shape for planting.

I mark out the rows 18 inches apart and sow sage seed in the rows. Then I plant the onion sets in a double row one inch apart each way. Cover two inches deep and tramp well. Two weeks after planting the onions and weeds will be showing nicely. Then take an iron rake and rake lightly across the rows of onions; this takes some of the soil off the top of the onions and upsets the weeds. I have a pony 12 hands high, and a boy 12 years old, and a harrow cultivator, and away they go twice a week up and down the rows. The result is shown in the accompanying illustration.

I planted 500 lbs. on half an acre this spring and started bunching on May 24. I pull the largest three times a week, and put 12 onions in a bunch, selling at 40 cents per dozen bunches. After the onions are sold, the sage is nicely up, and if taken care of ought to be a good crop. I have followed this plan for many years. I also prepare the land for spinach the same way as for onions. After the spinach is sold I plow the ground and sow about June 20 long blood beets for winter. This leaves the land ready for onions in the spring.

Dutch Set Onions as Grown near Toronto

Where land is valuable and taxes high, as near a large city like Toronto, vegetable growers must practise intensive methods in the growing of their crops. Every square foot of land must be kept busy every day during the season of growth. There must be no idle room. This illustration gives an idea of inter-cropping and double cropping, as practised on the truck farm of Mr. J. W. Rush, Humber Bay, Ont. Spinach is shown and onions, and in the rows with the onions sage is grown.

Ashes as a Fertilizer

Prof. F. T. Shutt, M.A., Ottawa

How much wood ashes should be applied at a time on a vegetable garden? How are they best applied?—Market Gardener, Humber Bay.

Fifty to 75 bushels of hardwood ashes per acre constitutes a fair application. Some market gardeners use more than 100 bushels per acre, but before using such a large quantity it should be ascertained, by experiment on a small area, if the return justifies the expenditure. Much depends on the nature of the soil and its past history as regards manures and crops.

The ashes may be spread broadcast on the plowed land in the spring and well harrowed in. This will ensure their thorough incorporation with the soil before planting, and at the same time leave the available plant food within easy reach of the young rootlets.

Market gardeners can reap a handsome profit early in the season by selling wholesale, but later on when the glut comes it is better to retail from the wagon.—H. E. Reid, Toronto.

I change the ground for each crop every year if possible.—Jas. Gibbard, Doncaster, Ont.

OUR QUESTION AND ANSWER DEPARTMENT

Readers of The Horticulturist are invited to submit Questions on any phase of Horticultural work

White Strawberries

I am sending a few white strawberries, with plants, for examination. About two years ago I found the original plants growing wild, and am now cultivating them. What is your opinion of them?—T.A.C., Baltimore, Ont.

The white strawberry received is a representative of the alpine or perpetual class (*Fragaria vesca*). The stems are erect and strong, and the leaves are thinner and lighter in color than those of other types. The berries when received by THE HORTICULTURIST were very ripe and soft, but larger in size than is usually seen in wild specimens, due probably to the influence of the two years' cultivation. The seeds of this class are very prominent, not sunken in the flesh. The samples were too ripe to determine the firmness and quality.

Cultivated forms of alpine strawberries are rarely seen in this country. They are grown extensively in Europe, and the writer has seen them growing to perfection in South America. Under cultivation they attain above medium size, and the quality is high. They are deserving of more attention in home gardens, but are not likely, in competition with reliable red berries, to prove of commercial value in this country. It would be well, however, for Mr. Chapman to follow up the work he has already begun. Good cultivation and careful selection of plants when transplanting will bring about a marked improvement.

Strawberry Leaf Spot

I am sending to THE HORTICULTURIST for examination some strawberry leaves that are diseased. What is the matter with them?—Alex. G., Niagara-on-the-Lake, Ont.

The strawberry leaves are affected with what is commonly called the strawberry leaf spot. This is a fungous disease that is widely distributed, but does comparatively little injury on plantations that are fruited only one year. On old patches it does considerable damage. When the leaves are badly diseased, the crop of fruit is materially affected; the plant is weakened in growth and made almost worthless for the following season. For badly rusted beds, heroic measures must be adopted. Soon after the fruit is gathered the beds should be mowed, and the tops covered with straw or the old mulching and the whole burned. For plantations that are not badly affected, the disease may be kept in check by spraying with Bordeaux mixture. The spraying should commence in the spring as soon as the leaves unfold, and be repeated until the blossom appears.

Gooseberries and Currants

Can gooseberries and red currants be shipped successfully to Winnipeg?—F.W.G., Grimsby.

With ordinary care in harvesting before too ripe, these fruits can safely be shipped long distances. It is advisable, however, to ship red currants in the crate of 24 quart baskets rather than in larger bulk.

Planting Cedar Hedges

I planted a cedar hedge last spring, and although most of it has done nicely, a small proportion of the trees have died. I proposed replacing the dead ones with new shrubs this month, but have been advised that the month of June is the only month in which they can be planted with assurance of growth. I write to THE HORTICULTURIST for advice, and also take this opportunity of congratulating you on the excellence of your splendid magazine. It is worthy of the support of every Canadian.—Mrs. J. G., Smith's Falls, Ont.

Cedars can be planted any time between spring and fall. I have planted them in August with good success. May or June, when growth is just starting, is, perhaps, the safest and best season. The important point is to plant them when there is no danger of the roots drying out. The roots of evergreens are more or less resinous; when exposed to the air this hardens, chokes up the cells, and the trees die from suffocation. When transplanting, keep the roots from drying and thoroughly water and shade for a few days. It is advisable, also, to puddle the roots by dipping them in thick mud; by so doing, they will stand almost any hardships. The reason that the cedar hedge at Smith's Falls died out is due, probably, to exposure of roots before planting. Without appearing so the trees may have been half dead before they were planted.

Cedars Near Apple Trees

The cedar tree is said to be injurious to apple orchards. Please explain.—E.M.C., Picton.

There is serious objection to the use of red cedar as a wind break for apple orchards, on account of its being one of the two host plants of a fungous disease which produces what are commonly known as "apple rust" on the apple and "cedar apples" on the cedar.

Troublesome Wandering Jew

What is the cause of the leaves of Wandering Jew turning black when cut from the plant and put in a vase of water? I have several sprigs placed in a vase of water, and the ends of the sprays have begun to turn black and wither. Plenty of water is in the vase, and no sunlight strikes the leaves.—M.C.B., Toronto.

The sprays mentioned probably have been taken from a plant growing in dense shade, or in a very high temperature. Using cold water to start these sprays sometimes will cause them to turn black. Cut the ends of the stems off, and remove the black leaves, then place the ends of the stems in water having a temperature of about 65 degrees, Change the water about once a week. Extreme changes in surrounding conditions are usually the cause of the trouble mentioned. Partial shade, heat and moisture are the conditions that suit these plants.—Answered by W. Hunt, O.A.C., Guelph.

Flowers for August

Are there any flower seeds that, sown the first of August, will produce flowers this fall?—C.B.M., Burlington, Ont.

Flower seeds are uncertain sown as late as August. Much depends on the weather conditions in the fall. The following are annuals that produce their flowers quickly after sowing, and might give some flowers before frost: sweet alyssum, calendula, calliopsis, candytuft, larkspur, marigold, mignonette, eschscholtzia, gypsophila, balsam, nasturtium, and Shirley poppy. For climbers, scarlet runners and convolvulus. A few plants of petunias or verbenas planted out would be likely to give far better results than the seeds mentioned. —Answered by Wm. Hunt, O.A.C., Guelph.

To Kill Horseradish

How can I get rid of a patch of horseradish? —C.A.R., Guelph.

Plow or dig so as to expose roots to the action of frost in winter. Next spring grow an early hoe crop and cultivate well. Follow this with a cover crop of clover. Plow under the following spring and grow another hoe crop. Cultivate incessantly that season, and you will kill out the horseradish.

Spinach for Fall Sowing

Which is the best variety of spinach to sow in fall for early spring use?—M.M.W., Jordan, Ont.

The prickly or winter spinach is the best variety for the purpose. Other hardy varieties that may be used are Victoria and Flanders. The seed should be sown before the middle of September. During the autumn the plants will grow and attain fair size, and on the approach of winter they should be protected with a covering of straw.

Peach borer should be sought for and destroyed where found.

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OUR EXPORT COMMERCE IN FRUIT

Many fruit men do not appreciate the increasing significance of our export commerce in fruits. The exportation of fruit and the receipt of profitable returns in exchange involves one of the delicate features of our international trade. The fruit grower, the dealer and the shipper at home, and the commission man and the retail dealer abroad—every person concerned in the business—are subject to considerable speculative risk. The uncertainty of abundant crops in Canada, the probability of good crops in other fruit-producing countries (which has a material influence on the value and the extent of our exportations), the problems of packing and transportation, and many other difficulties, tend to make our export fruit business a commercial problem of more than ordinary importance.

Canadian producers and shippers of fruit may be proud of the increase in our export trade since the Fruit Marks Act became law. During the past five years the value of our export apple trade has increased nearly 100 per cent. This increase is due, not only to our natural resources and the natural trend of trade development, but also to the fact that the individual grower is slowly but surely finding out, by the bitter experience perhaps of unprofitable returns, the value of honest, modernized methods in growing, harvesting and marketing the product of his orchards.

Safe commerce in fruits depends on the essential quality of the fruit we have to sell, and of the value that we may get for it. High grade fruit is always in demand. It is only inferior grades that go begging for a market. Commercial reports, the world over, show this to be the case. How many fruit growers fully realize the force of this fact? The few who do, and who produce a class of fruit that is a little better than the other fellows', are the men who succeed.

What they want in England first of all is soundness and good keeping qualities, and nearly uniform size throughout the package. Flavor is an essential feature of prime fruit; but, in the list of export varieties, it is a secondary consideration. Apples when packed for export must have good shape, medium size, high color, and good keeping qualities. Uniformity in appearance and size means a good deal. Constant improvement in this respect is essential to the general progress of our fruit industry. For the export trade we must have uniformly good fruit throughout the package; fruit in sound condition with good keeping qualities for the dealer and consumer; and then superior quality for those who are ready to pay extra for it.

Export fruit should be sent in comparatively large lots of one sort and of one variety. There should not be too many varieties in one consignment. One reliable variety will give more satisfactory results and better returns than a medley of varieties of unknown, and perhaps, inferior merit. Varieties behave differently in cold storage and in transit; hence, when shipping, one variety in a consignment is better than a number.

The proper package in which to ship fruit is also an important question. Observers who have seen Canadian apples handled on the Liverpool docks emphasize the necessity of strong barrels, well bound with hoops. Experts uniformly advise the use of the eight-hoop barrel. While the barrel meets the customary demands of the trade, there is also a market for fancy apples packed in boxes. By packing high grade apples in boxes a direct appeal is made to the more select retail trade of the kingdom. Wrapping such apples singly with paper adds to the appearance and increases the probable returns.

Successful commerce in fruits depends, also, upon the nature and efficiency of the means at hand for transportation. Ocean transportation involves two questions: the question of rates and the question of service. To secure low rates fruit shippers must make regular shipments, and in such quantity that the transportation people will be forced to recognize the value to them of the fruit business and treat it accordingly. Efficient service in transportation—careful handling, proper storage apartments, low temperature, and good ventilation—will insure the safe delivery of fruit. No sort of provision for safe carriage, however, will carry fruit safely that does not start in a condition that will give it a fair chance. Transportation companies may provide conveniences and the provisions for safe carriage, but the grower must exercise care, skill and honesty in the production, harvesting and packing of his fruit, if he expects it to arrive at its destination in marketable condition, and to command top prices. It behooves the Canadian fruit grower, therefore, to pack his fruit honestly, to deal fairly, to ship packages uniform within and without, and to conform willingly to the business methods of the British purchaser.

THE NIAGARA STATION SOILS

The report of The Horticulturist, in the July issue, on the new experiment station soils has been borne out by actual mechanical analyses. An editorial representative of The Horticulturist personally secured ten samples of the surface soil with underlying subsoils, twenty samples in all, and sent them to Guelph for analysis. Six of the samples with accompanying subsoils, twelve samples in all, were taken from the original Rittenhouse farm, the first farm presented to the Ontario Government by Mr. M. F. Rittenhouse, of Chicago. Two other samples with subsoils, four in all, were taken from the Harris farm, the second presentation to the Government; and the remaining two samples with subsoils, four in all, were taken from the Culp farm, across the road from the farms already donated, and on which it is understood Mr. Rittenhouse has given the Government an option.

A close examination of the analyses, which Mr. W. H. Day, of the Physical Department, has been kind enough to furnish, shows the need for an additional area of sandy soil. The lightest soil on the farm contains only 56% of sand; the subsoil beneath this is variable, one sample analyzing 67% sand, and another, only 50 yards distant, 25% sand—a clay, and in this case hard pan at that. The soil in the ravine, according to the analysis, is comparatively low in organic matter; it is not a rich muck, as supposed; it is a fair loam. As stated in our July report, the largest part of the original Rittenhouse farm comprises clay loam, incumbent upon a clay subsoil containing only 14% of sand. The Harris farm, also, contains very little light soil. In fact, the analyses show the soils on the two farms to be even heavier than reported by us from our eye survey.

Contrasted with the foregoing the soils on the Culp farm are ideal. While low in organic matter, they are high in percentage of sand. This is the desirable type for peaches, English cherries and small fruits. We would therefore again urge the necessity of the purchase of the whole or a portion of the Culp farm, upon which the Government has an option at $100 an acre. Such an acquisition would provide the soil so necessary for experimental work in many important classes of fruits and vegetables.

TOO MUCH FRAUD

Those who sell their apples on the trees to dealers should be very careful in making an agreement. Irresponsible buyers, and even some who are not considered so, take advantage of technicalities to the very great loss of the fruit grower. Take a case in point. A farmer in Middlesex county sold his apples at a price per barrel, the grower agreeing to do the picking. The buyer was to furnish the barrels and do the packing. The price of apples declined, and the price of barrels advanced so rapidly, that the dealer could get no profit out of his bargain, and the apples were left in heaps under the trees until they were caught by frost. The grower sued on his contract, proving that he had done his part in delivering the apples picked. The courts held, however, that as they were sold at so much per barrel, the contract was not complete until the apples were placed in barrels and, consequently, the grower lost his suit.

The general public are not aware of how large a number of men there are who, practically, make a living by practices which must be considered fraudulent in connection with the buying of apples. The true remedy is the formation of cooperative associations and the selling of the fruit, picked and packed ready for market, to thoroughly reliable men who will pay cash at the time of delivery or give security that will be recognized at the banks. Nothing else should be accepted by the growers.

One of the active agencies recently organized for the keeping clean of the streets of a busy city, was that of the Clean City Club, started this year in Chicago. This organization became very popular in a short time, and within a few weeks after organization had upwards of 1,000 members. The club was divided into two groups, comprised mostly of children, each under the direction of a captain. Among the rules adopted by the club were the following: "Pick up at least one piece of paper from the street every day. Clean your own back yard and porches and try to interest the boys and girls next door to do the same. Keep at least one flower in your window. Be smiling and clean yourself." The interest such work creates in the keeping of the individual homes, as well as the city, neat and attractive, is one of the best results that follows public effort of this nature. We have societies in some of our cities, notably London and Hamilton, that are doing excellent work along similar lines. More are needed. There are dozens of horticultural societies in Ontario that could branch in this direction with advantage to themselves and to the public.

Throughout Canada and the United States, the Niagara district of Ontario is noted for the fruits and product of its soil. The Niagara

District Horticultural Exhibition, to be held at St. Catharines on Sept 14-15, should be made to bear out this reputation. It should be made representative of the entire district, so as to advertize, in a comprehensive and striking manner, the extent and character of its resources and possibilities. St. Catharines, on those dates, should be a rallying place for fruit, vegetable and flower growers, far and wide. The best that can be produced in the district should be exhibited, with the idea of bringing out the educational features that are so necessary to the success and purpose of horticultural exhibitions. The management is showing commendable enterprise and their efforts should be heartily supported by the growers, as it is for the benefit of the growers that the exhibition is to be held.

Journalism has its compensations. During the past month THE HORTICULTURIST has been the fortunate recipient of various donations of fruit. Mr. R. H. Lewis, of Hamilton, kindly remembered our failing and favored us with a basket of luscious cherries, which, in the absence of the editor, unfortunate occurrence, were devoured by members of the staff. Mr. Robert Thompson, of St. Catharines, was so generous as to send us a crate of prime strawberries—about the best we have ever seen; and from Helderleigh, the famous fruit farm and nurseries of E. D. Smith, M.P., Winona, we received a large basket of Black Tartarian cherries. How nice it is to have friends among the fruit growers!

An international conference on plant breeding is being held in London, England, July 30 to August 3. Since 1899, two conferences of this nature have taken place, one in London and one in New York. To the third in London, plant-breeding specialists from all parts of the world have been invited to attend. Every effort has been made by the council of the Royal Horticultural Society, under whose auspices the conference is taking place, to make the event a pleasant and profitable one. There is no subject associated with the care and development of plants respecting which there is so much need of greater knowledge, as that of the production of new varieties and new forms. International plant breeding conferences will do much to solve some of the difficulties, and to broaden the ordinary conception of these things.

The former associate editor of THE HORTICULTURIST, Mr. J. Albert Hand, B.S.A., resigned recently to accept a position with E. D. Smith, M.P., of Winona. The best wishes of THE HORTICULTURIST follow him in his new work.

Items of Interest

Mr. J. W. Bigelow, supt. of the hort. dept. of the Dominion exhibition to be held in Halifax this fall, writes us that the prize list was prepared largely in the interest of Ont. fruit growers. Large prizes will be given for grapes, peaches and other fruits not grown in N.S. Ont. growers will find it to their interest to exhibit. Special prizes are offered also for competition between the various provinces of the Dominion.

The Orillia Co-operative Fruit Assn. has been formed recently. The members intend to pack their apples in a central packing house, and to ship by refrigerator car to Winnipeg. The officers are: Pres., J. Ryerson, M.A.; v.-pres., Wm. Bacon; sec.-treas. and manager, R. A. Lehmann; additional directors, Alex. Cuppage and R. B. Anderson.

In the govt. spraying experiments at Meaford, Bordeaux mixture was used in the proportions of 4 lbs. blue stone, 5 lbs. lime, 4 ozs. Paris green, to 40 gals. water; instead of 8 ozs. Paris green, as mentioned in the July issue of THE HORTICULTURIST. Also, lead arsenate was used, not lead acetate. The mistake occurred in the copy, and was not due to any error on the part of THE HORTICULTURIST.

Prince Edward Island Letter

Rev. Father Burke, Alberton

THE orchard meetings which, late as they were, covered the province in their extension, in the month of June, were not as well attended as one could have desired; but because of the places in which they were held for the most part, and the extra busy season, can be said to have been fairly successful. Instructor Burke, nobody doubts, understands thoroughly his business. It is to be regretted that the dept. at Ottawa has so far refused to make his position permanent, and thereby contribute in the only sane way to effective horticultural instruction amongst us. We had at the outset, through Dr. Jas. Robertson, a yearly engagement with our inspector; that was done away with when he retired. We are sure that there is no one around the agri. dept. at Ottawa who claims to know P. E. I. needs better than the late commissioner, no one more sincerely desirous of helping the agricultural interests with us to the place they must attain when an enlightened and vigorous policy brings to us the prosperity which we need and is ours by right.

Only the other day we remonstrated on this instructor business; only the other day the new sec. of agri. for this province urged on the powers this great need, and by the looks of things there is no very proximate intention with the dept. of meeting the well-expressed and urgently pressed wishes of the people. The inspectors of B.C., Ont., and N.S., have annual engagements and are helping out very materially the instruction propaganda in their respective provinces. We have a circular (No. 7) issued by Mr. Maxwell Smith in B.C., which is or ought to be invaluable to horticulture there, giving as it does the result of his experience in planting varieties suitable to that country. Eastern inspector-instructors have not attempted anything of the sort that we know of. They might well do so. And P.E.I. could most profitably employ Mr. Burke all the year around in this work. No one understands it better. Will the minister not harken to our petition in the matter?

PARLIAMENT AND THE APPLE BARREL

Senator Ferguson, of this province, by far the best authority on fruit matters in the senate of Canada, made some judicious remarks when the act to amend the Marks Act was up for consideration. He thoroughly agreed with the opinion expressed by us in this column before, that "No. 1" should be our best brand of apples and as near perfection as "Fancy" now exacts. He did not like the definition of No. 2, but accepted it as coming from the conference of eminent Canadian horticulturists that met at Ottawa. It permits two varieties of fruit in a package, and that was undesirable. Sir Richard Cartwright, who had charge of the bill, agreed with Senator Ferguson; but as No. 2 was a grade not likely to ever see the other side of the ocean the bill was passed as originally drafted by the conference. It has since received the assent of Gov.-General Grey, and is law. What has become of the barrel question? Questioned by Senator Ferguson in the senate as to whether the Dominion conference decided on the 96 qt. bbl., Leader Scott said that he knew nothing of it, and had consulted the minister of agri., who also knew nothing of it. Strange!

The apple outlook is good; that is, the early and fall apples have fixed well. There was a wet, cold period when late varieties were in bloom, and as that period is only over, there might be danger in saying that the later fruit has fixed as well as the early. We hope that it has, however. Cherries are abundant and so are small fruits. Plums look very shy. Insect enemies are much in evidence.

The Northwest Fruit Trade for This Season

J. J. Philp, Winnipeg

HAVING dealt with the question of packing and packages very fully in the last issue of THE HORTICULTURIST, and which referred principally to small package fruits, I will now discuss the packing of the apple crop. First of all, however, a few words on the prospect for a demand for Ont. apples. I have taken pains to secure all the information possible, and am now in a much better position to write with confidence than I was a month ago.

In dealing with this subject there are several features to be taken into consideration. What is the quantity available for shipment at the place of growth, what is the quality of the fruit, and what is the probable cost going to be? The reports secured are almost unanimous that the several conditions affecting these factors are very favorable.

At this end we need to find the purchasing capacity of the market to which these goods are to be consigned. Here, too, the conditions are very favorable. Indeed, to such an extent is this true, it is going to tax the ability of Ont. to supply the demand, provided always that the fruit is put up in a proper manner; viz., well selected, properly graded, nicely marked, and last, but not least, honestly packed.

There is the danger of one or more of the markets becoming congested, through the consigning of too great a number of apples at once. This is a danger that is always to be faced by the man who consigns his fruit; more especially when it is taken into consideration that it is in this class of fruit that the greatest laxity as to methods and care in grading prevails. Let no man say, therefore, that he has been misled by any optimistic reports of the writer; if, under such circumstances, he is up against it when he comes to receive his returns.

The danger of such a state of affairs is confined almost entirely to early apples, peaches, plums, pears, and grapes. One reason why it occurs less frequently in the fall and winter apples, is owing to the fact that they are of a more durable nature. If they do not meet with an immediate sale they can be held for the market to clear.

It is beyond the power of any one to correctly compute the purchasing capacity of this market. It is bound to be large. For this reason the acreage is largely increased. Crops as a whole never looked better, and the number of consumers also is very much greater than they ever were at any time in the history of this country. There will be no difficulty from lack of funds.

Lastly, let me urge upon everyone (and don't forget that this means you), to whom is entrusted the duty of packing any fruits for any market, to guard well the responsibility that is placed upon you. Remember that your character is written on every package more indelibly than it could be with any pencil. Thus it shall be in the future. Instead of the execration and contempt that has been heaped on the packers of the past, your praises will be sung by thousands to whom you are unknown, and the truth of the proverb be illustrated: "By their works shall ye know them."

Fruit Crop Conditions in Quebec

Auguste Dupuis, Village des Aulnaies

EAST of the city of Quebec the apple crop will be much less than last year. Many thousands of bushels were sold last year, by orchardists of the counties of Rouville, Vercheres and Chateauguay, at nearly all stations on the I.C.R. from Levis to Campbellton, N.B. The apples were in bulk, varieties mixed, wind falls and bruised to fair apples. They sold for 50 to 75 cts. a bush. Several thousand bbls. R.I. Greening, Baldwin and Spy also were brought from Montreal to all towns and villages; Levis, St. Charles, Montmagny, Kamouraska, Riviere du Loup, Trois Pistoles and Rimouski taking the largest quantity. Most of these apples came from Ont.; none were first grade, all No. 2 or below. More will be needed this year, and more of better quality. Merchants prefer to deal directly with Ont. growers rather than buy through a middleman.

APPLES

This year's prospect for apples in Quebec, by varieties, is as follows: Red Astrakan, light; Tetofsky, fine; Duchess, extra good; Wealthy, good on young trees, light on old ones; St. Lawrence, very light; E. Golden Russet, very light; Wolfe River, very light; Fameuse, medium, scab in some trees; Roxbury Russet, medium; Alexander, light; Y. Bellefleur, medium; Y. Transparent, good; Transparent de Croncels, good; and Iowa Beauty, light.

CHERRIES AND PLUMS

On both shores of the St. Lawrence, east of Quebec city, the cherry crop is a failure and the plum crop very light. L'Islet, Kamouraska and Montmagny counties have a sufficient crop of Damson, Reine Claude and other European plums to supply the Quebec market and the villages east. Lombard, very light crop, except on young trees; Bradshaw, medium, fruit very large and fine; Grand Duke, good; Pond's Seedling, good; Washington, light; Green Gage, none; Gueii, light; Favorite hative, medium; Y. Egg, good; Prune d'Agen, extra heavy; Mirabelle, good; Early Red, medium; Moore's Arctic, light, except on young trees; Hudson River Purple, fair; Quackenboss, medium; Coe's Golden Drop, medium.

Small fruits: Strawberries, garden and wild, good crop; raspberries, good; gooseberries, good.

INSECTS AND DISEASES

Aphids are plentiful. Trees in nurseries, growing luxuriantly, afford abundant food. Aphids are destroyed easily with tobacco solution, sprayed often. Codling moth and caterpillars are not numerous. Curculios seem to have been destroyed in 1903-4. Rose bugs have given much trouble, on light soil, everywhere. I am surprised at their absence on rose bushes, on loamy or clayey soil, separated from the former by only a few acres. Cherries are attacked by a small black insect living on tender twigs; small red ants keep them company. Worms are appearing on pear leaves. No apple worms this year. Blight appeared on dwarf pears; defoliation, burning the leaves and pruning lightly had a good effect. Scab is affecting Transcendent crabs.

ANOTHER REPORT

The following notes were taken from a letter written by Mr. D. L. House, Stanstead Co.: "There is only a fair prospect for apples. In exposed localities, on the hills, the crop is light. The plum crop is a failure, also cherries."

WESTMOUNT, MONTREAL

Mr. R. Brodie: On the Island of Montreal Fameuse apples will be about half a crop; they are free from spot and large in size. Duchess, Alexander, Montreal Peach, and Montreal Strawberry promise a full crop; Wealthy and McIntosh Red, one-third of a crop. Montreal melons and tomatoes, a good crop.

The Trade in Early Apples

A. McNeill, Chief, Fruit Division, Ottawa

The prospects for a fair crop of early apples in Canada are good. This fruit, in years gone by, has never been considered as profitable commercially as the winter fruit. There is an old adage that every dog has its day. To my mind, the day of the early Canadian apple is at hand. Two markets are opening for which large quantities of early apples are required, namely our Canadian western provinces, and the markets of Gt. Britain. As far as the fruit grower is concerned, they may be considered together. Both markets will require a careful cooling of the fruit before the time of shipment in refrigerator cars, and in the case of Gt. Britain cold storage on shipboard.

The people of the west are buying early apples in increased quantities, and the demand this year will be even greater than usual, owing to the shortage of small fruits, not to speak of the most extraordinary increase of population during the last 2 or 3 years. I predict that the west will soon take all the early apples that we are now growing, and will take them at even a higher price than will be paid for the winter varieties.

A careful inquiry has shown me that the orchardists of Canada have been planting very few early varieties for the last 15 years. The demand has been increasing very rapidly these last 2 or 3 years, and consequently, higher prices are being paid by the consumer than formerly.

The English fruit crop for early apples is only middling. Even if it were better, there would still be a demand for Canadian apples. The comparative regularity of our packing and grading, and the fact that they are handled in large quantities through regular dealers in the large centres, give them a preference over home-grown fruit in the English markets; which, perhaps, the intrinsic quality of the fruit would not justify. We can hope, therefore, to do a large business with Gt. Britain, as well as with our western provinces in early apples. This trade in early fruit is essentially a box trade. The sooner our orchardists learn the art of box packing, the better it will be for them. This fruit cannot be handled in bbls. profitably. Baskets may be used for local markets, but are not a proper package for long distance shipment. The co-operative assns., and large dealers who are prepared to handle this fruit through central packing houses, will reap a rich reward as a result of their forethought.

Ont. is not taking advantage of her chances with reference to the western trade. There was a splendid opening this year for small fruits, and had the Ont. growers been prepared to ship in carload lots, they could have captured the market, and in all probability would have held it. We have the opportunity now for early apples, but they must be grown clean and be properly packed.

Nova Scotia Notes

G. H. Vroom, D.F.I.

The weather for the past few weeks has been fine and dry. Since June 10, there has been very little rain. The fruit crop has suffered slightly, but not seriously as has been reported. There will be an average crop. The continued fine dry weather has been in favor of clean fruit. Notwithstanding that "spot" is quite prevalent in some sections, the fruit in general is fairly good in quality. Gravensteins are inferior and old Ben Davis is scabby. Baldwin, Blenheim, King, Nonpareil, Falawater, Stark and Ribston are looking well. Under favorable circumstances, N. S. should export 400,000 bbls. of good apples this season. In Aug., one can better estimate the crop.

In well-sprayed orchards the fruit is fine quality; yet, I am continually meeting fruit growers who do not believe that spraying does any good. One of the worst pests we have in N. S. is the "green apple worm." This worm eats a hole in the side of the young apple, sometimes as far in as the core. It ruins a lot of the best fruit. It is a common thing for one worm to spoil a dozen apples. The pest is light green in color, has five white lines running lengthwise on its body, and, when full grown, is 1¼ inches long. The tent caterpillar also did considerable damage; fruit growers must reckon on this pest next year.

Barrel and Box Supply

To ascertain the opinion of manufacturers of boxes and bbls. on the relative value of these packages for the shipment of apples, THE HORTICULTURIST wrote to several well-known firms. A few replies were received in time for mention in this issue. For publication in the Sept. issue, THE HORTICULTURIST invites letters on this subject, not only from manufacturers, but also from growers and shippers.

In a letter to THE HORTICULTURIST, the W. R. Thompson Co., Teeswater, Ont., wrote: "Bbls. are preferred to boxes. We anticipate no shortage of either. Ruling prices are about 35 cts. for bbls., and proportionate for boxes."

The Sutherland Innes Co., Ltd., Chatham, Ont.: "The demand this year for apple barrel stock is greater than it has been for 3 years. We have not made a single carload of box shooks for apples this year, and there does not seem to be any inquiry for them in Canada or the eastern states. As far as we can learn from the fruit packers, the box has not been a success for the export trade, not so much on account of the cost, but the apples do not arrive at their destination in good condition. In B.C. and Cal. boxes are used extensively for packing apples, but we do not reach this trade, so we do not know how the percentage of bbls. and boxes will usually run. We understand, however, from a great many of the fruit packers, that the boxes are principally used for both domestic and export trade, but at considerable expense and principally for fancy fruit.

"All of the eastern shippers have learned by experience that the bbl. is the best package for apples, in fact, some of them have had very costly experience trying to ship apples in boxes.

"The packers are demanding a very good bbl. this year, some of them even going to the extent of using flour bbls. for apples, which is unnecessary, as a good, first-class package, suitable for carrying fruit, can be made out of selected No. 2 staves or "mill run" stock, with 1st class hoops. The principal thing in making a satisfactory package is to use good, heavy staves made out of straight grain stock with good sound heading, and the very best hoops.

"The prices for bbls. this year are governed by the locality and quality. A good apple bbl. can be bought in Toronto and neighborhood at 35c. to 38c., according to whether it is a 6 or 8 hoop bbl. This will give an idea of the standard price for 50 miles around Toronto. The bbls. cost more where they are made further away from the source of the supply."

A letter from Taylor & White, St. John, N.B., said in part: "There is no demand for boxes for packing purposes. The prevailing price for bbls. is 24 cts."

Enclosed find $1 for my subscription to THE CANADIAN HORTICULTURIST. Having read a copy of the paper, I consider it most interesting and up-to-date, as well as instructive to gardeners, amateurs or professionals.—John Kirby, Vancouver, B.C.

Good Average Canadian Fruit Crop

FROM present indications, the fruit crop of Canada may be regarded as a good average. In Ont., the plum crop is a failure; pears promise a medium crop; peaches, average. Cherries are practically done. Fall apple indications point towards a good crop; winter apples, only medium. Small fruits are producing large yields. The grape outlook, also, is promising.

In Que., a fair crop of early and fall apples is expected. Cherries are a failure and plums very light. Small fruits are yielding well. In P.E.I. the apple outlook is fair; plums are shy; small fruits, abundant.

The reports of Ont. crop correspondents for THE HORTICULTURIST, show the situation in the various counties. Further reports of the outlook in N.S., P.E.I., Que., and the West, are published in this issue under separate headings.

ESSEX COUNTY

Leamington.—Shipping of early peaches will begin Aug. 1. Cherries are done. Grapes promise a good crop; no rot yet developed. Plums and pears, also, look well. The apple crop will be a good one.—E. E. Adams.

KENT COUNTY

Chatham.—There is little change in fruit prospects since last report. Apples and pears look well. There will be a few peaches. There has been some dropping in apples, but not enough to thin them materially.—W. D. A. Ross.

LAMBTON COUNTY

Forest.—The winter apple crop promises to be medium to light. Orchards, properly cared for and sprayed, have a good crop of clean fruit, but the uncared for ones, which are in the majority, are poor. Our association will have a good crop of fine quality, the result of a by-law that requires all members to spray at least four times. Fall apples promise a good crop, but as winter varieties are grown almost entirely, fall fruit will have little effect on the trade.—D. Johnson.

WENTWORTH COUNTY

Fruitland.—Raspberries are at their best, both red and black are a good crop; quality and size never better. Cherries are done. Black and red currants are a good crop, above the average, and the quality is very fine. Kittatinny blackberries promise a large yield of good fruit. Plums are few and far between; according to the acreage, the crop is almost a failure. So far, the rot has not been serious. Peaches, fine in quality and a good average crop. Pears will be an average crop. Grapes promise a good crop; no rot so far; if it does not appear, and nothing else attacks them, grapes will be a paying crop this year.—C. C. Pettit.

HALTON COUNTY.

Burlington.—Raspberry crop is good; except old patches, hurt by frost. Cherries have been a full crop. Red currants, less than average. Black currants are a full crop. The sample is extra good in all these fruits. Plums continue to drop, scarcely any left on trees. Peaches are light. Apples, free from spot, sample good. Greening and Baldwin, average crop; Spy and Mann, full crop. Ribston, Ontario, King, light. Early Harvest, Astrachan, Transparent, full crop. Pears will be an average crop.—W. V. Hopkins.

PEEL COUNTY

Clarkson.—Early apples have dropped badly; winter apples, not a full crop. Strawberries were two-thirds of a crop; prices were highest we have known for many years, more than making up for shortage in crop.—W. G. Horne.

SIMCOE COUNTY

Craighurst.—Early apples, especially Duchess, will be a full crop. Fall apples are promising. Winter apples promise only a medium crop. The fruit so far is clean. Raspberries are almost a total failure; canes killed to the ground. Blackberries are slightly better. Cherries and plums, a total failure. Altogether, a very discouraging year.—G. C. Caston.

HASTINGS COUNTY

Belleville.—Winter apples promise a medium crop. Summer and fall varieties are more plentiful.—F. S. Wallbridge.

GREY COUNTY

Clarksburg.—In general, Georgian Bay orchards have been neglected; where well cared for, there is a fine crop. Winter apples will be a medium crop and promise good quality. Fall apples will be medium or better, where well cared for. Pears, light, not half a crop. Plums and peaches, a total failure. Cherries are a full crop; quality excellent. Small fruits, sufficient for local demand. Grapes, badly winter killed, will be a poor crop.—J. G. Mitchell.

GRENVILLE COUNTY

Maitland.—The apple crop will be on the light side this year. Fameuse, the principal variety grown, continues to give promise of a medium yield; the fruit is growing rapidly and taking on color. There was some injury in June by the tussock moth. There has been very little development of "spot" and, with favorable weather, prospects promise a crop of good to first-class quality. In 1905, the orchards were free of spot until the 3rd week in Aug., when it

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developed at a terrific rate, destroying the quality of 90% of the fruit, in some orchards that had not been sprayed. We should profit by past experience and spray all Fameuse orchards at least once more this year to insure perfect fruit. A clean crop of Fameuse always gives profit to the grower, while a "spotted" crop is absolutely worthless.—Harold Jones.

PRINCE EDWARD ISLAND

The prospects for a full apple crop here are not quite so bright. The cold, wet, sunless weather which continued through the period of pollination for late varieties has had its effect. There are very few Spys, and the whole range of winter keepers will be short. They may show up better when they come to maturity. Early and autumn varieties are already bending the boughs. Plums will be scarce; the trees have had a hard time somehow. Cherries are not plentiful. Strawberries are yielding well. Raspberries and blackberries promise a fair crop. Currants and gooseberries are in abundance. We never had more pests in prominence, both insect and fungus. All the sprayings should be carefully made.—A. E. Burke, July 23.

Niagara District Exhibition

The vigor with which the arrangements for the Horticultural exhibition to be held in St. Catharines, Sept. 14-15, are being pushed, augurs well for the success of the show. There have been several meetings of the committee of management and of special committees during the past month, and all the important arrangements have been completed. The prize lists for fruit, flowers and vegetables have been arranged, and are being printed. Liberal prizes are offered in each class. Copies of the list may be obtained from the secretary, Miss M. M. Tasker, of St. Catharines. Members of affiliated societies can exhibit free; any person can join his local society by payment of $1 to the secretary.

A big convention of Odd Fellows, from all parts of the world, will take place in St. Catharines, at the time of the exhibition. The members are to be admitted at a special rate, and it is expected they will be present in a body. With the object of securing a large attendance from all parts of the Niagara district, it is intended to arrange for a special train service, from Hamilton, at least, and possibly from Oakville. A number of educational features, similar to those conducted at the Hamilton exhibition last fall, are being arranged.

Committees have been at work for some time, obtaining special prizes. A large number have been secured. The following is a list of them: Peaches and pears are to be exhibited in 11 qt. bskts., heaped and covered with leno; grapes to be packed in 6 qt. bskts., heaped and covered with leno. Fruit, winning prizes, in all cases to become the property of the donor of the prizes. $5 will be given for the best 5 bskts. of grapes, 1 each of Concord, Worden, Niagara, Lindley, and Brighton; best 3 bskts., 1 each of Globe peaches, Bartlett pears, and Delaware grapes; best 2 bskts. of peaches, 1 each of late Crawfords, and Elbertas. A special prize of $5 worth of nursery stock for the best 3 bskts. of grapes, 1 each, of Concord, Niagara and Worden.

Special prize of $2.50 for the best 2 bskts., 1 each, of Howell pears and Niagara grapes. Special prize of $3 for best basket of early Crawford peaches; $2 for best 2 bskts. of grapes, 1 each, of Niagara and Worden. $2 for best bskt. of Reine Claude plums.

Special prizes of $3 for the best bskt., each, of the following peaches: Late Crawford, Elberta, Reeves, Globe, Yellow and White peaches. Special prize of 1 year's subscription to the daily St. Catharines *Journal* for the best bskt. of Fitzgerald peaches; special prize of 1 year's subscription to the daily St. Catharines *Standard* for best bskt. of Rareripe peaches.

Special prizes of $3 for the best bskt., each, of Duchess, Bartlett and Bosc pears. Special prize of piece of china, worth $2.50, for best bskt. of Louise Bonne pears. Cash prize of $2 for best bskt., each, of Seckel, Bartlett and Sheldon pears.

Special prize of $3 for best 3 bskts. of grapes, 1 each, of Wilder, Niagara, and Lindley; $2 for best 2 bskts., 1 each, of Worden, and Moore's Diamond; $2 for best bskt., 1 each, of black and white grapes; $2 for best bskt., 1 each, red and white grapes; $2 for best bskt. of Delawares. Special prize of $3 for best box white peaches, packed and wrapped; $3 for best box yellow peaches, packed and wrapped; $3 for best box St. Lawrence apples, packed and wrapped. Special prize, rug, valued at $5, for best box Gravenstein apples, wrapped and packed.

Among amateur gardeners in Ottawa keen interest is being taken in the Lady Grey Garden awards.

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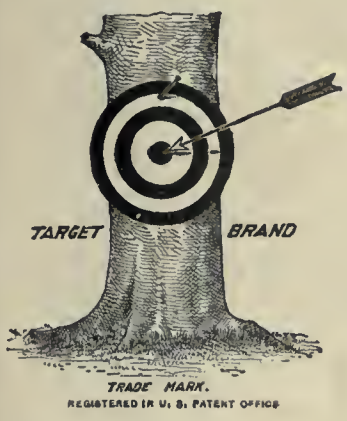

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—W. H. GIBSON, President Newcastle Fruit and Forwarding Association.

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ST. CATHARINES, ONT.

Condition of Vegetable Crops in Ontario

EXCEPT in the case of beans, which are a failure, the condition of the vegetable crops of Ont. is good. The report in THE HORTICULTURIST for July has been borne out since then by the growth of the crop. Beans have been seriously injured by blight and anthracnose. Onions, in spite of the maggot scare one month ago, have managed to pull through a fair crop. Celery, also, in most sections, is only fair. Potatoes on low land, are slightly affected by rot; in case of continued rain, the crop may be considerably damaged; early blight, also, is prevalent in some localities. Other classes of vegetables are producing large crops. Tomatoes, although rather backward in season, are exceptionally good and the acreage is large. The following reports by crop correspondents of the Ont. Veg. Grs. Assn. show the situation in the various districts:

OTTAWA

Early cabbage is flooding the market; also wax beans, cucumbers and bunch roots. Onions, usual acreage, have made excellent growth. Transplanted onion, to bunch, are a glut on the market. Tomatoes are coming in for $3.00 a bu.; there is a big crop. Early potatoes, a good crop. Early cauliflower, good.—T. Mockett, July 21.

KINGSTON

Onions are a victim to the blight; the crop is ruined. Celery is making slow growth. Potatoes, early, are yielding fairly well, no signs of decay. Those planted in early June show a slender growth and a poor crop. Beans are affected with anthracnose, which makes them useless for the table.—Chas. F. Adair, July 20.

TORONTO DISTRICT

Bracondale.—Crops are looking well. Beans are almost a complete failure on account of blight. We started to market tomatoes on June 20; they promise a large crop later. Late cauliflower and cabbage are in a healthy condition; also onions, but in small quantities. Potatoes, early varieties, are all marketed. Celery is doing well.—A. W. Shuter, July 21.

Humber Bay.—Crops are looking well. Onions that looked poor a month ago, have overcome the maggot and promise a heavy crop. Early potatoes are very good; prices, $1.25 a bu. until July 20, then 75c. a bu. Rot has made its appearance in some places. Peas are very scarce. Butter beans are a good crop, but badly spotted and worthless. Green beans are good, no spot 75c. a bu. Cabbage, very good, 40c. a doz. Vegetable marrow, good crop, 50 to 75c. a doz. Outside cucumbers, good, 30c. a doz. Green house long cucumbers, $1 a doz. Cauliflowers, better than last year, 75c to $1.50 a doz. Tomatoes, a good crop, but late. Celery looks very well; early, 75c. a doz. Beets and carrots are very plentiful; low price, 10c. a doz. White turnips not good. Prizetaker onions are on, 15c. to 20c. a doz. bnchs of 3. I took a long drive west of here this week and was surprised to see the quantity of vegetables the farmers are growing for the Toronto market. Lots of them have from 5 to 15 acres of vegetables, such as onions, tomatoes, cabbage, parsnips, carrots, beets, turnips, squash, cucumbers and celery. The vegetable growers must grow early crops or it is a poor lookout for them.—J. W. Rush, July 21.

Doncaster.—Onions promise better than at the beginning of the season. Early celery is doing well, some nearly ready for market. Early potatoes coming in slowly, selling at $1.25 a bu. Potato blight is prevalent. Beans are a failure, being all spotted. Prices are very good. Cabbage, 25c to 40c.. a doz.; potatoes, $1 a bu., beets and carrots, 15c. a doz. bnchs of 3 each; beans, $1 a bu.; lettuce, 15c. a doz.; greenhouse tomatoes, 10c. to 12½c. a lb.—C. Gibbard, July 20.

CLARKSON

Early potatoes are looking well. Onions are doing fine; they have escaped the maggot so far. Sweet corn is doing well.—W. G. Horne, July 22.

BURLINGTON

The crops never looked better, with, possibly, the exception of the late tomatoes. Early cabbage and cauliflowers are done; prices have been above the average. Melons, egg plants and peppers are doing fairly well; peppers, large green, promise a larger yield than last year. Onions are doing remarkably well and promise a large yield. A severe hailstorm on July 10 was very destructive to tomato, melon and cucumber vines.—J. A. Lindley, July 23.

SCOTLAND

Vegetation is behind last season. Frost destroyed the first planting of cucumbers; the second planting is showing well for a good crop. Early potatoes are fairly good and ready for market. Tomatoes are not producing good vines. Cabbages are making fair progress. Onions are good, but the acreage will be small. Raspberries are a fair crop, but the acreage is small; prices all higher. The acreage of late potatoes and turnips is larger this season than last.—E. G. Malcolm, July 21.

ST. CATHARINES DISTRICT

Tomatoes, both early and late, are looking well and setting fruit freely. Early tomatoes are ripening, but there is not as large an acreage as last season. In factory tomatoes, the acreage is larger. Peas, grown largely for factory, are

MANY OF THE TREES
WHICH ARE GIVING

ABUNDANT CROPS

to the growers this fall, were the product of our Nurseries. A visit to our Nurseries at this season of the year will convince you that stock sent out, bearing our trade mark, is in every way reliable

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an excellent crop. Beans are doing well. In canning beets, a larger acreage has been sown but the yield will not be up to the average. Sweet corn is doing well. The usual acreage of onions was planted, but poor seed and lack of help has decreased it. The acreage remaining is looking fairly well, with the onions bottoming rather slowly. Squash is grown for shipping and canning; a larger acreage; plants doing extra well. Carrots doing well but a less acreage. Early potatoes, an excellent crop, with acreage above the average; the late crop doing well. Bugs not troublesome. Early cabbage, a good crop; late, was planted freely.—Robt. Thompson, July 23.

NIAGARA FALLS SOUTH

Vegetables are maturing before the average time. Melons, peppers, egg plants, cucumbers, tomatoes and squash have made luxuriant growth, and promise a record yield. Early tomatoes are ripening fast, the vines still growing and setting fruit—a sure sign of an enormous crop. Late tomatoes promise a big crop. Corn is looking grand, the extra early varieties just maturing; second early and evergreen, growing very fast and a fine color. Beans, offered in large quantities, are a drug on market. Second early potatoes, cabbage, peas, squash, beets and lettuce are very plentiful. Onions, good, promise an average crop. Planting of late cabbage and celery completed; acreage less than last year. Sowing of fall turnips and spinage now in progress. Prices: Beans, wax or green, 12c. to 20c. a pk.; beets, onions, carrots, radish, 15c. to 30c. a doz. bnchs.; cabbage, 30c. to 50c. a doz.; cucumber, 45c. a doz; corn, 15c. to 20c. a doz.; lettuce, head, 15c. to 20c. a doz.; peas, 75c. to 80c. a bu.; squash, 30c. to 60c. a doz.; potatoes, new, $1 a bu.; tomatoes, $1 to $1.25 a bskt.; raspberries, $2 to $2.25 per 24 qt. crate.—Thos. R. Stokes.

CHATHAM

Onions promise a large crop, more than sufficient for home consumption. Tomatoes are growing well, but the early fruit is a poor sample. Potatoes, good; in some sections injured by bugs. Early cabbage, very plentiful, market glutted.—Fred Collins, July 19

LEAMINGTON

Early cabbage is about all shipped. Prices have been good, selling now at $1 a half bbl. crate. Wax beans have been a poor crop,owing to blight; prices have been satisfactory, at present 50c. a bskt. Early cucumbers, a lighter crop than usual; aphids have been bad. Cucumbers grown under glass have been fair. Tomatoes are ripening well; the demand is excellent; prices $1.25 a bskt. wholesale, $1.40 retail. The outlook is for good sales throughout the season. Earliana, the leading tomato grown, is not as productive as some other varieties being tested. Early celery is now coming in. Melons are doing well, but not up to the standard. Those started under glass are doing nicely with some growers. Seed sown in the field has not done well; weather has not been favorable. The crop will be later than usual. Sweet corn also is late. Green peppers are being shipped at 75c. a bskt. New potatoes, $1 a bu.—E. E. Adams, July 20.

SARNIA

Early potatoes, a good crop, 90c. a bu., are over-stocking the market; blight is showing slightly. Late potatoes are looking well. Early cabbage, good, but not plentiful on account of the maggot; prices 60c. a doz. Late cabbage, below the average in acreage, but looking well. Tomatoes are growing well, but late. Onion maggot has done considerable damage. Celery and cauliflower not grown extensively.—W. A. Broughton, July 22.

Good Service This Season

The Allan Line service for the season 1906, is perhaps the best the shippers of Canadian perishables have ever had via the St. Lawrence route. The fast steamers to Liverpool are especially adapted for apples, not only on account of the speed of these vessels, but, also, because of the modern equipment which has been placed in the ships to suit the Canadian trade. The Glasgow vessels are sailing direct and being a passenger service, shippers can depend on the boats sailing on time. The carrying qualities of these ships are well known to the Canadian trade.

The Allan Line berth at the Surrey Commercial Docks, London, lends itself admirably for quick delivery to the different fruit markets, such as

HEADING

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Choice Apples in Boxes Will Pay

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"We beg to tender you best thanks for the attention given to the discharge and delivery of the Californian fruit ex SS *Hibernian*. You will be glad to learn that the fruit was landed in magnificent condition, and that it made the best prices obtained this season. You may assured that if we can influence any consignments by your line we shall do so as the care bestowed is fully in accordance with what Mr. Simons, of Glasgow, told us with respect to the shipments made by your line to that port.—Sgnd Garcia, Jacobs & Co."

We would draw the attention of our readers to the advertisement in this issue from Mr. J. Balme, of Mexico City, Mexico. He has a large business and is thoroughly reliable in every way.

FARTHER NORTH. "It is the lightest and strongest house imaginable."
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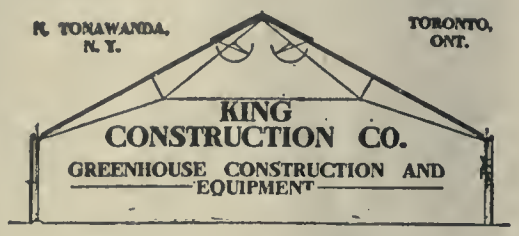

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THAT will mean a good thing for you provided you can sell it all at good figures. There's the trouble. A big crop often means a glutted market, low prices and loss to the grower.

Why not work up a sure market of your own? There are scores of grocers and fruit dealers throughout Canada who would be glad to take your fruit at good figures if you can supply them regularly with first-class freshly picked fruit.

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Items of Interest

The new Process Building at the Canadian National Exhibition will be the centre of interest for those who desire to see machinery in actual operation. The Little Giant Sprayer Co. have secured an excellent position in this building, which will be visited by many fruit growers.

The importance of purchasing only the best breeds of poultry is often seen in the poor success attained by amateur breeders. Our readers will do well to read the advertisement in this issue of The Golden Kennels & Poultry Co., in which they offer many pure-bred birds at very low cash prices.

Classified Advertisements

Advertisements under this heading will be inserted at the rate of ten cents per line, each insertion; minimum charge fifty cents in advance.

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SITUATION WANTED—Competent and experienced gardener, for greenhouse or outside, desires permanent employment. Situation on private estate preferred. Good references. Address A. G., care of the HORTICULTURIST, TORONTO, ONT.

The fourth annual meeting of the American Apple Growers' Congress will be held at St. Louis, Mo., Aug. 14, 15. Among the speakers is noticed the name of Mr. Alex. McNeill, Chief Fruit Division, Ottawa.

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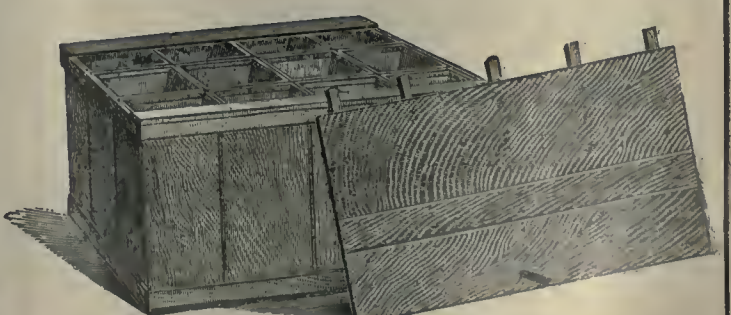

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The Canadian Horticulturist

Vol. XXIX SEPTEMBER, 1906 No. 9

The Ontario Cooperative Fruit Growers' Association

A PROVINCIAL organization of cooperative fruit associations was inaugurated on August 14, in the office of THE CANADIAN HORTICULTURIST. It is to be called The Ontario Cooperative Fruit Growers' Association. The following officers were elected: President, A. E. Sherrington, Walkerton; first vice-president, D. Johnson, Forest; second vice-president, W. H. Dempsey, Trenton; third vice-president, Robt. Thompson, St. Catharines; secretary-treasurer, A. B. Cutting, 507 Manning Chambers, Toronto.

The associations that were represented by delegates are located in various parts of the province; thus the meeting was a representative one. The names of the delegates and of their respective associations are: A. E. Sherrington, Walkerton; W. H. Gibson, Newcastle; W. H. Dempsey, Trenton; Wm. Leary, Parkhill; Robt. Thompson, St. Catharines; W. A. D. Ross, Chatham; D. Johnson, Forest; W. R. Davis and W. H. MacNeil, Oakville; Elmer Lick, Oshawa; J. E. Johnson, Simcoe; and Dr. J. D. Hamill, Meaford. Several associations, not represented, including Ingersoll, Ilderton, Belleville, and Orillia, sent word expressing themselves in hearty accord with the movement. Others present were: P. W. Hodgetts, Sec. Ontario Fruit Growers' Association, Toronto; P. J. Carey, Dominion Fruit Inspector, Toronto, and H. B. Cowan, Toronto, who called and acted as secretary at the meeting.

OBJECTS AND PURPOSE

The objects of the association are of a wholly commercial nature, and are designed to assist the various local cooperative fruit growers' associations:

A.—By acquiring and furnishing reliable information regarding fruit conditions and prospects throughout Canada, the United States and Europe.

B.—By assisting the various local associations to market their fruit to the best possible advantage. 1. By placing agents in the leading local and foreign markets. 2. By bringing the local associations in close touch with leading buyers. 3. By acquiring and disseminating reliable information in regard to prices paid in the case of actual sales. 4 By assisting local associations to procure satisfactory accommodation for the storage of their fruit, and cars for the shipping of same. 5. By cooperating in the purchase of supplies at the best possible prices.

C.—By cooperating with the Ontario Fruit Growers' Association in the formation of additional local cooperative fruit growers' associations, and in such other educational work as will be in the best interests of the fruit growers of the province.

D.—By taking steps that will tend to bring about more uniform grades in the pack of the fruit of the province. Already, following the purpose of this clause, the Dominion Fruit Division has been petitioned to provide that the local cooperative fruit growers' associations be specially inspected and specially protected; it has been requested that a fruit inspector call, at frequent intervals throughout the packing season, at the various cooperative fruit houses, so as to guarantee a high standard of character and pack in the fruit sold by the associations. The Fruit Division has been asked, also, to hold special meetings in those localities where cooperative fruit growers' associations are situated, to demonstrate the best and most approved methods of packing fruit, particularly apples, in boxes and barrels. In reply to these requests, Mr. Alex. McNeill, Chief of the Fruit Division, promises to assist the newly organized association in every way possible; special protection will be afforded and arrangements already have been made for an expert packer to visit the cooperative fruit houses and give demonstrations in correct packing.

A Leader

I am pleased with the great improvement that has been made in THE CANADIAN HORTICULTURIST. It is one of the leading horticultural journals that comes to my office.—W. N. Hutt, State Horticulturist, Maryland Experiment Station, College Park, Md.

MEMBERSHIP

Membership in the Provincial Association shall be confined to the local cooperative fruit growers' associations of Ontario that have charge of the grading, packing and sale of the fruit of their members. Each affiliated association shall have the right to appoint one representative to act as a director of the Provincial Association. The membership fee shall be $5.00 a year. In case it be required to meet further obligations of the Provincial Association, a small levy per barrel will be made on the affiliated associations.

HOW IT HAPPENED

The need for united action on the part of the cooperative fruit growers' associations in the province has become apparent during the past few years, and is a result of the great increase in the number of these organizations. The meeting that culminated in the organization of The Ontario Cooperative Fruit Growers' Association was called by THE CANADIAN HORTICULTURIST. It was the outcome of considerable correspondence on the question between this journal and cooperative associations, in different parts of the province, that resulted from the trip of the representative of THE HORTICULTURIST this summer to Great Britain. The associations desired that our representative should place them in touch with leading and reliable firms in the Old Country willing to handle Canadian fruit. They asked, also, for certain important information relating to the British fruit markets. The idea of calling this meeting met with the enthusiastic approval of such leaders in the movement for the cooperative handling of fruit as Messrs. A. E. Sherrington, of Walkerton; W. A. D. Ross, of Chatham; Robt. Thompson, of St. Catharines, and D. Johnson, of Forest, who have long recognized the fact that the time was coming when the local cooperative associations should be united through a central organization.

The newly-formed Ontario Cooperative Fruit Growers' Association will proceed along conservative lines. Too

much will not be attempted the first year. In the past, several local associations have sent agents to the northwest and other markets. It is possible that next year the Provincial Association will appoint agents to represent all the local ones. In the meantime, the officers will be acquiring information regarding the possibilities.

LEADING BUYERS AND GROWERS MEET

At the close of the meeting a number of leading buyers and shippers, and a representative of leading steamship lines, including some from Great Britain, met the growers and discussed matters pertaining to crop prospects and sales. Their names are as follows: R. J. Graham, of Belleville; Eben James, Toronto, representing Woodall & Co., Liverpool, Boyd Barrow & Co., Glasgow, M. Isaacs & Sons, Limited, London; Frank Hamilton, of Frank Hamilton & Co., Liverpool; A. S. Chapin, Toronto, representing Thompson & Mathieson, Glasgow, Henry Levi, London, D. Crossley & Sons, Liverpool and Manchester, and North of England Fruit Brokers, Manchester; E. T. Boland, Toronto, representing The Robert Reford Co., Limited, of the Thomson Line, the Donaldson Line, Lord Line, etc.; Fred. Barker, Toronto, representing J. C. Houghton & Co., Liverpool and London, Thomas Russell, Glasgow, J. and H. Goodwin, Manchester; and A. E. W. Peterson, Toronto, representing Jas. Adam, Son & Co., Liverpool, Jas. Lindsay & Son, Limited, Glasgow, Northard & Lowe, London, and Manchester Fruit Brokers, Limited, Manchester.

The fact that an organization of this kind has been formed, and that the members were met by leading men in the trade at the initial meeting, is an important step in the direction of placing the fruit trade of Canada on a much more satisfactory basis. The various local cooperative associations have done good work, but have been handicapped somewhat by lack of unity and, therefore, much may be expected from their combined efforts through a provincial association. It will be of value, not only to the affiliated associations and to the province of Ontario, but it will have, also, a marked effect on the progress of fruit matters all over the Dominion.

Apples on Sandy Soil

THE following communication was received by THE HORTICULTURIST from Mr. Newton Cossitt, Grimsby, Ont.: "I have an apple orchard that does not bear fruit. Eight years ago it produced a very good crop, but little or none before or since. The trees are 20 years old, are Spys, Baldwins, and R.I. Greenings, in about equal proportions, and are planted on sandy soil. The trees blossom profusely, but fail to set fruit.

"I have tried various schemes to induce fruitfulness. The land has been liberally treated with manure, including 20 bushels of wood ashes per acre. I have plowed down four crops of clover within the past eight years. Some years the orchard is left in sod, and other years kept under cultivation. The trees have been well pruned, some times in winter and other times in June. I was told to girdle the trees, and tried it on one. It died. Some person advised me to severely head back. Two years ago I did this with five trees; as yet there are no results. A neighbor suggested that I prune the trees off close to the ground, and I have almost concluded this is the best scheme. However, I decided to ask THE CANADIAN HORTICULTURIST or its readers for a less heroic solution of the problem."

The question resolves itself into this: Can apple trees be grown successfully on sandy land?

In reply to the question Mr. W. T. Macoun, horticulturist at the Central Experimental Farm, Ottawa, wrote as follows: "Some of the best apples and best crops of apples are produced on sandy soils, although the Baldwins succeed better on heavier land. Occasionally a tree will bloom and not set fruit from some apparently physiological cause even when the tree is making good growth.

"There are three causes of unfruitfulness in trees that bloom profusely but do not set fruit. First—Lack of proper pollenation. Some varieties of apples are self-sterile or nearly self-sterile, and need the pollen of some other variety blooming at the same time to pollenize it and cause fruit to set. In the present case we should have concluded that the unfruitfulness was due to lack of proper pollenation if there had been only one variety, and that the Spy, as this variety is practically self-sterile, and being a late bloomer requires a late blooming variety blooming near it, for the best results. An isolated orchard of Spy trees we know of bore little or no fruit on this very account. Even in the present case we should not expect much fruit from the Spy unless there are some later blooming kinds than Baldwins or Greening near it.

"Second—Injury from frost or other weather conditions. It is not, however, likely that these have affected the flowers at Grimsby.

"Third—Injury from the insects known as the Eye-Spotted Bud Moth, and the Cigar and Pistol Case Bearers. The injury from these insects is often very great, and it is done at a time when one is not usually looking for it, namely, just when the buds are opening. This is the most probable cause of unfruitfulness. A tree may bloom profusely and yet a large proportion of the flowers may have been rendered useless for setting fruit by the Bud Moth which cuts through the buds and destroys the essential part of the flower.

"In the various experiments which have been tried to produce fruitfulness, no mention is made of spraying, and we should strongly advise as a last resource, if this has not already been done, the thorough spraying of the trees with Bordeaux mixture and Paris green, as there is probably injury from the Black Spot fungus as well. The two most important sprayings are just when the leaf buds are opening and shortly before the blossoms open. A third spraying should be given soon after the flowers fall."

A NOVA SCOTIA OPINION

The matter was also referred to Mr. R. W. Starr of Wolfville, N.S., one of the successful orchardists in that province. He replied as follows:

"It is impossible to say why these trees do not bear fruit. It would seem strange to us in this part of Nova Scotia to find an orchard in the condition in which Mr. Cossitt claims his to be, continuously refusing to bear. Possibly overproduction of wood growth, induced by excess of nitrogen, and severe pruning may be the main cause; or the soil being sandy may lack potash, lime, or phosphates. Experiments with these on different portions of the orchard may solve the question. At the same time I would withhold barn manure and prune no more than was absolutely necessary.

"As to the question of successfully growing orchards on sandy land: If he can grow strong, healthy trees, there should be no soil reason why they should not bear fruit. If they do not, we must look further for cause—probably to some climatic influence, such as cold, wet weather or frost, during the time of blossoming, sufficient to injure the pollen, or prevent its distribution by insects or wind. All fruit blossoms require a certain amount of heat and dryness of atmosphere at the season

The New Cooperative Fruit Movement

A group, taken after the meeting, when many of the delegates had left to catch their trains. Only about one-half the number of delegates and others are to be seen in the cut. Their names are as follows: 1. A. E. Sherrington, Walkerton, President; 2. D. Johnson, Forest, 1st Vice-President; 3. W. H. Dempsey, Trenton, 2nd Vice-President; 4. A. B. Cutting, Toronto, Sec.-Treas. 5. W. A. D. Ross, Chatham: 6. Wm. Leary, Parkhill; 7. W. R. Davis, Oakville; 8. W. H. MacNeil, Oakville; 9. H. B. Cowan, Toronto; 10. A. S. Chapin, Toronto; 11. Fred. Barker Toronto; 12. A. E. W. Peterson, Toronto; and 13, E. T. Boland, Toronto.

when the pollen is ripe and the pistil is ready to receive it, and make fertilization successful.

Possibly the orchard may be exposed to cold winds. If so, he must plant wind breaks of quick growing trees to protect it. Perhaps it is situated in a low spot subject to frost. For that, I know of no protection except a strong smudge of smoke on the windward side during the cold nights when the trees are in bloom.

"I have been growing apples all my life, but I have never had such an experience in orcharding as that described by your correspondent. Consequently I am not in a position to do other than make suggestions, which may be altogether astray from the case, as I know so little of the real facts and conditions of the orchard. If it were mine I should try a great many things, and make many experiments before I tried the last resort, pruning close to the ground."

Expert Opinions on Peach Problems

THERE are some prominent defects in the methods of handling and marketing peaches in this country. A few of them were mentioned in the last issue of THE HORTICULTURIST. That peaches should not be picked green, nor handled roughly, nor packed on end, as is the custom in most orchards in our peach districts, is the opinion of those who are in close touch with the industry and with the trade. THE HORTICULTURIST is in receipt of various letters that discuss these questions in more or less detail

GREEN PEACHES IN TORONTO MARKET

The following article, taken from *The Canadian Grocer*, shows the effect, on the trade, of green peaches and of packing peaches dishonestly:

"If the grocer who usually supplies a prominent Toronto financier with peaches could have seen him one Saturday recently, on the Niagara wharf, buying half a dozen baskets of 50-cent early Clingstones at a dollar a basket because the top layers were large and he thought they were Crawfords, he would have regarded it as a huge joke. It illustrates the unsatisfactory basis of the fruit trade in Ontario. The millionaire had a perfect right to buy them and to cart them home. The probability is he blames the grower and will buy his next peaches at the grocer's.

"That is but one instance. A working man with his wife and family were standing at a fruit stall in Toronto. They were on their way to Island Park for an afternoon out and husband and wife were debating whether or not to buy a basket of early peaches. They were 35 cents.

"'We can't afford it,' said the little woman.

"'Oh, it's only 35 cents and we don't go often. You can can what are left to-night. I'll help you,' replied the good-natured man.

"They got the peaches and got on the boat and the children danced around anticipating a treat. It was agreed they

might have two each. The wife took out one, it was green; another and it was green, and in a minute or two they knew they had been gulled.

"That kind of thing hurts trade and until a more systematic basis is established for the fruit trade of Ontario, there will continue a good deal of dissatisfaction and ill-will. There is no reason why dealers should not buy Ontario peaches with the same sense of security they buy oranges or any other kind of California fruit. They ask for a certain size at a certain price and get it. What a boon it would be to the grocery trade if peaches were packed of a uniform size throughout the package and they could be ordered according to size! The consumer would gain, too, and first-class peaches would be less expensive because they would not then, as now, have to make up the losses caused by poor and unsystematic methods. Of course, the remedy is in the grocer's hands, but if the grocers had a strong provincial organization they could do much to accelerate the movement."

COOL PEACHES BEFORE SHIPPING

To place peaches on distant markets in good condition, it is necessary that they be placed in refrigerator cars and cooled quickly. Quick refrigeration is essential to prevent the spread of Monilia (brown rot) in the car, which can do so much damage in 24 hours. No refrigerator car yet constructed can give quick refrigeration. For this reason, it is advisable, when possible, to have the fruit cooled before it enters the car. The following letter on this point was received recently from Mr. Alex. McNeill, Chief, Fruit Division, Ottawa:

"Canadian shippers of fruit are not the only ones who are experiencing the evil effects of loading on cars without first cooling the fruit. This season, according to *The Packer*, of New York, very serious complaints were made concerning the condition of the Georgia peach crop, which condition would have been in all respects satisfactory had the fruit been cooled before being shipped in the cars. *The Packer* writes as follows:

Caught in the Act

Mr. W. M. Orr, one of Ontario's successful fruit growers, picking peaches in his orchard at Fruitland

"'If the Georgia shipping points could have a storage to cool off the peaches before loading them into the cars, it would mean a great deal more to the shippers in advanced prices than the expenditure.'"

J. H. HALE ON PEACH TOPICS

THE HORTICULTURIST has received the following letter from Mr. J. H. Hale, of Connecticut and Georgia. It expresses expert opinion on various topics of interest to peach growers: "The article on peach packing in the August issue of THE CANADIAN HORTICULTURIST covers the situation in an admirable way. There is no question that, if fruit can be handled in refrigerator cars or through cold storage, it will keep longer after it is allowed to come up to full maturity on the trees, rather than picked in a half green state, and also be much better for consumption. The packing of peaches on end is all wrong, both for best display of the fruit and for safety in transportation.

"There is probably no package yet invented that is proving so universally satisfactory as the six-basket Georgia carrier. Next to that, the 20-pound California boxes. Both are somewhat costly, however. People who are looking for cheap packages, and have only a low grade market to supply, can do as well perhaps by using the inferior Climax basket, or other packages of similar construction.

"Rainy weather in harvest season hurt the Georgia peach business this year. We have a fine crop in Connecticut, but cloudy, damp weather all through July put them on the ragged edge. The sun is out now, and if we have favorable weather through August and September, we ought to have the finest crop on record."

Fire Blight and How to Know It

B. Barlow, O. A. C., Guelph

MANY fruit growers are of the opinion that blight on the apple and blight on the pear are two different diseases. This idea is erroneous. They are identical in character. Mr. Barlow, Demonstrator in Bacteriology, O.A.C., writes: "*Bacterium amylovorium* is a species of bacteria which causes a disease of the pear, quince, apple, mountain ash, and sometimes the plum. The disease is called by several popular names, as fire blight, pear blight, and twig blight, but the germ which causes it is the same and the disease spreads from any one of these trees to any other. It is very destructive to the pear and quince, often killing the whole plant. It diminishes the apple crop by infecting the blossoms and killing the fruit spurs, and it sometimes kills branches, or even whole trees of the apple."

For the benefit of the readers of THE HORTICULTURIST, Mr. Barlow also outlined a simple method of determining whether or not fruit trees are affected by the disease: "Any fruit grower can readily determine whether or not his trees are affected with pear blight. Fix a needle firmly in a wooden handle such as a penholder, burn the needle clean in the flame of a candle and use it to tear out a fibre of the inner bark from a newly blighted twig, or thrust the needle into a recently blighted young fruit of apple or pear. Now thrust the disease-bearing needle into a sound, healthy green fruit growing on the tree. Then burn the needle clean again in the candle flame. In two to four days the blight appears and spreads steadily from the needle puncture, at length killing all tissue of the green fruit. A bacterial growth pours out from the puncture as a pearly, viscid, bead-like drop. This may be so copious as to flow down the side of the pear. Other similar bead-like drops often exude through the skin of the pear at a distance from the puncture. The twig bearing the inoculated fruit should be broken off after three or four days and placed in water, so that the further progress of the disease can be observed without danger of infecting the tree. It is but the work of a few hours to test many trees from the same, or from different orchards, whether apples, pears, or quinces. It is, of course, necessary to burn the needle clean each time before beginning a new test, and it is well to make controls by thrusting the clean needle into green pear fruits. No disease will develop in this case. At the end of the test the diseased pears should be burned. We do not know any cure for pear blight, but diseased branches may be cut out and burned."

Remove the crop remnants as soon as the crop is done.

The Joint Stock Company Plan

J. G. Mitchell, Clarksburg, Ont.

FRUIT growers in this district tried several times to form associations, but always failed. Not being discouraged, however, a few of them decided to cooperate on the joint stock company plan. Five growers got together, subscribed $500 each, and formed a company for the purpose of dealing, wholesale and retail, in all kinds of fruit; to build and own fruit houses, cold storage plants and to own and operate evaporators, canning factories, cider and pulp mills, factories for the making of barrels, boxes, crates and any other packages required in the handling of fruit. The name of the company is the Georgian Bay Fruit Growers', Limited, share capital $25,000, divided into 1,000 shares of $25 each. The head office is at Thornbury, in the county of Grey. The directors are J. G. Mitchell, Geo. Mitchell, John Veitch, Wm. Reekie and Albert Moore.

A Fruit House Built by Enterprising Growers and Built to Last

The company applied for a charter under the Ontario Act for all the above, which was granted. Observe that $500 is one-fifth of $2,500, which is 10% of the amount necessary to capitalize at $25,000. The subscribed $500 gave each of the charter members 20 shares, which was afterwards sold and transferred to others. The provisional stock is all sold and also some of the general stock. This provides funds to carry on building operations. There are about 125 shareholders, holding stock from $25 to $125 each.

The advantage of this plan over the loose association is obvious. It is limited liability and a financial interest all the year round; complete independence. The fruit is gathered and stored for higher prices; that is, put on the best markets of the world in the best possible way; the last cent is secured, less the cost of getting the fruit to market. A storage fee is charged to members of at least three cents a barrel up to 100 barrels a share; on over 100 barrels a share at least five cents; to non-members, at least 10 cents. The total fees are returned as a dividend on the investment. When there are more than enough to pay 6% the balance is placed in the bank as reserve against a light year. The storage capacity of the building is 10,000 barrels and, being situated on the main switch of the G.T.R., it gives the very best facilities for shipping.

The fruit is all graded and packed in the fruit house by experienced men, and so well is it being done, the company is already outselling some of the old shippers. The company has a banking by-law, whereby warehouse receipts can be issued on the security of the apples and advances can be made to our members as soon as the fruit is brought in. The members do not have to wait until the fruit is sold before realizing on it. This helps the members out while the apples are held in storage.

Everything is working satisfactory. There are already behind the company enough orchards to produce in a good year 25,000 to 30,000 barrels. The total capital stock is offered for the purpose of building more apple houses, cooper shops, cold storage, an evaporator, etc. The desired object is to have the whole district in one big company with several fruit houses under one head office, to do business on a big scale and thus reduce expense of management. Already barrels are cut from 50 to 30 cents each.

When a member brings in a load of apples he receives a ticket for the same. A duplicate, which the company keeps, is entered in the ledger to his credit. When the fruit is packed, he is again credited with the amount of No. 1's and No. 2's which his apples graded, also the culls, if any. The average selling price on each variety and grade is the price which all receive.

I think the joint stock company plan is far ahead of associations that have no place for winter storage. Associations are obliged to ship in the fall, when apples are cheap. A joint stock company can keep its fruit till February or March, if necessary. Our company has no trouble in selling shares, as there are people inquiring about it nearly every day. A great many who had no apples last year are with us now. Judging by the experience I had in the past trying to organize fruit growers' associations, and by the success we are having with the joint stock plan, I will have nothing more to do with associations whatever.

We have a large amount of stock sold in other districts, besides Thornbury, where branch houses will be built very shortly. Soon, this company will be, if not already, one of the strongest apple combinations in the world, working on the cooperative plan. Business was commenced only a year ago, August, 1905; now, everything is working satisfactorily, and the prices realized are the highest of any shippers to the British market.

Fruit Graders.—In answer to a request from THE CANADIAN HORTICULTURIST for information regarding mechanical fruit graders, Prof. W. N. Hutt, State Horticulturist, Maryland Experiment Station, writes: "Some of the larger peach growers in Maryland make use of machine graders, but the greater proportion of the crop is packed by hand. The most satisfactory machine grader I have seen in operation is that made by Heach & Dromgold, of York, Pa. This machine will sort perfectly as to size. It does not bruise the fruit. The decayed or defective specimens are removed by hand as the fruits are rolling slowly down the chutes. This machine grades much more rapidly and accurately than can be done by hand. One of our largest shippers uses this machine, and says it gives the best satisfaction."

Spring Flowering Bulbs Planted in the Autumn

W. T. Macoun, Horticulturist, Central Experimental Farm, Ottawa

SEPTEMBER is the month in which to plan and plant for next spring. The best plants to furnish attractive and abundant bloom in the garden at that time are the spring flowering bulbs, the most useful of which are the snowdrops, crocuses, scillas, hyacinths, narcissi, and tulips. A judiciously chosen selection of these will give bloom from the time the snow goes until the month of June.

A spring flowering bulb may be described as a fleshy, underground bud, from which roots develop in the autumn and leaves and flowers in the spring. The plant grows rapidly in spring, produces leaves and flowers and dies down; the roots wither up and the bulb then becomes dormant until new roots are made in early autumn. During this period of growth the flowers for the next season are formed in the bulb, and sufficient food and energy are stored up in it to cause rapid development when the proper time and conditions come. With this knowledge of the character of bulbs and that the flowers are already formed in them before they are planted, it can be easily understood that large, well-developed bulbs are more likely to give better results than small ones; when buying this should be taken into consideration.

Bulbs do best in loamy, well-drained soil. They will rot in soil not well-drained in a wet summer. A sandy loam is better than a clay loam. The soil should be dug to a depth of 12 to 15 inches and well-rotted manure worked thoroughly into it the previous spring, if possible. If applied in the fall, the manure should be buried below where the bulbs will be after planting, as when pure manure comes in contact with the bulbs they are liable to rot or become diseased.

While the bulb contains the future flower and considerable energy, this energy will not be exerted to the full unless the bulb is well rooted before winter sets in. For this reason the bulb should be planted early enough to have a good root system before winter. Very often the cause of poor flowers in the spring is lack of roots. If planted during the latter part of September or early in October, bulbs will have ample time to get well rooted before winter. If through any cause planting is delayed until late in October or November, the soil should be heavily mulched with straw, strawy manure or leaves, to prevent the soil from freezing early, and thus give the bulbs a chance to make roots for some time longer than they would if not mulched, but late planting is seldom satisfactory.

The depth of planting and distance apart of the bulbs will depend on the size of the bulb. Tulips, narcissi and hyacinths should be planted from four to six inches deep, measuring to the bottom of the bulb, and about the same distance apart. Snowdrops, crocuses, squills or scillas, should be planted from two to three inches deep and about two inches apart. If the soil is clayey or if there is manure not well mixed with it, it is advisable to put a little sand under each bulb to prevent rotting.

Bulbs are more effective in masses or clumps than in single rows. While tulips and hyacinths are usually planted in beds (their place to be taken by annuals later on), and are most effective when used in this way, they may be used with good effect in small clumps dotted through the perennial border. By this method of planting there need be no large bare places in the border without bloom after the bulbs have done flowering.

In addition to its value in keeping out frost while roots are developing in the early part of winter, a mulch is very beneficial in affording the bulbs some protection from the changes of temperature in winter and is especially useful when there is no snow on the ground. As soon as the snow goes in spring the mulch should be gradually removed, as tulips especially make early and rapid growth and may be broken if left to grow through the mulch.

VARIETIES RECOMMENDED

There are so many fine-named varieties of tulips, narcissi and hyacinths that it is rather difficult to choose a few to recommend which will combine all the desired characteristics and be cheap enough to be bought by the average person. The following list, however, is a good one:

TULIPS—EARLY SINGLE

Chrysolora, height 11 inches, golden yellow; Keizerskroon, 14 inches, crimson-scarlet, with broad yellow margin; Joost Van Vondel, 10 inches, crimson, flaked with white, flowers large; Joost Van Vondel (white), 10 inches, pure white, large flowers; Proserpine, 12 inches, rich rosy carmine; Vermilion Brilliant, 10 inches, bright vermilion; Couleur de Cardinal, 11 inches, bronze scarlet; Cottage Maid, 9 inches, white, bordered with rosy pink; Duchesse de Parma, 13 inches, orange red, with broad yellow edge; Thomas Moore, 14 inches, orange, sweet scented; Van Der Neer, 10 inches, violet; Standard Silver, 10 inches, white, feathered with crimson.

TULIPS—LATE SINGLE

Retroflexa, medium height, pure yellow, reflexed petals, graceful; Macrospila, medium height, brilliant scarlet, with black and yellow base, sweet scented; Fulgens, tall, crimson-scarlet with yellow base; Golden Crown, medium height, golden yellow, edged with crimson; Snowdon (Le Candeur), medium height, pure white, becoming suffused with pink; Parisian Yellow, tall, bright yellow, pointed petals, graceful; La Panachee, medium height, cherry crimson, flaked with white, variegated foliage; Picotee, tall, waxy white, with faint pink edge; Goldflake, tall, bright orange scarlet, flaked with yellow, sweet scented; Spathulata, tall, rich crimson-scarlet, blue black base; Maid of Holland, medium height, cherry red, striped with yellow, sweet scented; York and Lancaster, (Shandon Bells), medium height, white with a deep margin of rose.

TULIPS—EARLY DOUBLE

Alba Maxima, medium height, pure white; Couronne d'Or, medium height, orange yellow; Helianthus, medium height, red and yellow; Imperator Rubrorum, medium height, crimson-scarlet; Murillo, medium height, blush pink; Purple Crown, medium height, purplish red.

TULIPS—LATE DOUBLE

Mariage de ma Fille, tall, white, feathered with cherry crimson; Rose Pompon, medium height, pale yellow, well flaked with pink; Yellow Rose, medium height, golden yellow, sweet scented; Pæony Rose, medium height, scarlet; Overwinner (Belle Alliance), medium height, blue violet, feathered with white; Admiral Kinsbergen, medium height, brownish violet.

TULIPS—PARROT

Cramoisie Brilliant, medium height, deep crimson; Lutea Major, medium height, golden yellow; Perfecta, medium height, yellow, feathered with scarlet. Darwin Tulips, mixed. Bizarres, mixed. Byblooms, mixed.

NARCISSI

Emperor, large trumpet, yellow; Horsefieldi, white perianth and yellow trumpet; Sir Watkin, sulphur yellow petals, large yellow cup, tinged with orange, sweet scented; Barri Conspicua, pale yellow petals, cup orange scarlet, sweet scented; Poeticus Ornatus, perianth pure white, cup margined with scarlet, sweet scented; Poeticus, perianth pure white, cup orange scarlet. Other good varieties are: Bicolor Grandis, Albicans, Wm. P. Milner, Minnie Hume.

The following varieties are less hardy, and need to be replaced from time to time. They are, however, cheaper, and owing to their great beauty are well worthy of cultivation: Obvallaris, Golden

Spur, Princeps, Van Sion (double), Sulphur Phoenix.

HYACINTHS—SINGLE PINK AND ROSE

Charles Dickens, rosy pink; Gigantea, blush pink, large spike; Norma, fine rosy pink, large bells; Sarah Bernhardt, deep rose.

HYACINTHS—SINGLE RED

General Pelissier, deep crimson; Lord Macaulay, rose with carmine stripes.

Spring Flowering Bulbs Planted with Perennials in Border, C. E. F., Ottawa

HYACINTHS—SINGLE WHITE

Alba Superbissima, pure white, large spike; La Grandesse, pure white, the best white; Queen Victoria, pure white.

HYACINTHS—SINGLE BLUE

La Peyrouse, fine porcelain blue; Grand Maitre, deep porcelain blue; King of the Blues, deep glossy blue.

SNOWDROPS AND CROCUSES

The snowdrops are the first flowers of spring, and usually bloom before all the snow has left the ground. The species known as *Galanthus Elwessii* is the most satisfactory. A good plan is to plant the snowdrops where the snow melts early so as to obtain flowers at the earliest possible date.

Crocuses bloom shortly after the snowdrops and are very showy little flowers. They should be planted in masses in the border or around shrubs or trees. They are also effective in the lawn and are planted by cutting and raising a small piece of sod and planting the bulb in the soil and replacing sod.

MISCELLANEOUS

The scillas, or squills, are bright blue in color, and very striking in early spring. *Scilla Sibirica* is the most satisfactory. *Scilla campanulata*, which blooms late in May, is useful as it comes when most of the bulbs are over. Chianodoxa, or Glory of the Snow, is another blue flower which is also satisfactory. *Chianodoxa Luciliæ* is the one usually planted, but the flowers of *C. gigantea* are larger. Grape Hyacinths are also dainty little flowers which succeed well. The fritillarias are interesting spring flowering bulbs, the Crown Imperial being a very rapid growing and striking looking plant in early spring. The Guinea-hen flower, or common fritillaria, is also attractive.

A Rose that Blooms Twice

Mrs. Arch Thomson, Erin, Ont.

I have a rose bush that produced two crops of bloom during 1905. I got it from Washington state three years ago. It is a house rose, I was told. In the house I managed only to keep it alive. Two years ago I put it in the garden, as I understood they are cultivated out of doors in Washington. Friends told me that I would lose it, but I thought I would try the experiment.

Last summer it bloomed at the same time as other roses, about July 1. The flowers were pink, quite large and double. About August 15 it budded again, and bloomed early in September. The flowers were just as large and perfect as those of the previous blooming. It is planted on the southeast side of a picket fence, and gets just the same attention as other rose bushes.

Last January, when the big thaw came, I wrapped it and other rose bushes with some old canvas. This spring it budded again, and bloomed about the last of June or July 1. The flowers that opened were perfect, but some of the buds were stung and did not open. The bush again bloomed in August.

Flower Notes

Always keep house plants clean.

Remove every dying leaf on house plants as soon as seen.

Turn the plants in the window garden at least once a week.

Plant growing by those who simply grow plants because their friends have them, is likely to be a failure.

To develop the beauty of their color, most flowering plants require a good deal of sunshine.

Many people keep their rooms too warm for the health of both plants and persons.

Treat your house plants to a draught of fresh air on every fine day, by opening a window or door some distance from them.

Lawn and Garden Notes for September

THE early frosts of fall are due about the middle of this month. If tender and sensitive plants are protected, they may yet flourish for the Indian summer. When frost is expected, it is well to water the plants and the ground thoroughly. The water should be applied just at nightfall. Covering the plants with cloth or paper will accomplish the same purpose. A little work at the right time will be amply repaid by a longer season of bloom and beauty in the garden.

THE HOME VEGETABLE GARDEN

At the first sharp touch of cold, gather all the remaining fruits from the tomato and squash vines. Tomatoes will ripen in a dry cellar. Squash should be stored in a dry atmosphere and at a cool temperature. They should be laid on shelves one tier deep, and never piled, if it is desired to keep them long.

It is a good custom in the home garden to dig potatoes as soon as matured, and place them in cellar. Potatoes seldom rot when so treated, provided that all injured tubers are carefully culled out. By the early harvesting you prevent the scab and save your potatoes from white grubs and mice. The potatoes keep admirably, if not piled so as to become heated. Look them over for any that are injured, for should there be such, they will ferment, acidity set in and of course rot; if in contact with others, they too will become diseased and great damage ensue.

The rhubarb plant is a gross feeder, and it is well to mulch the bed with a heavy coat of rotted manure.

Continue to earth up the celery, or blanch with boards. For late autumn use, it is probably best to bleach the plants with earth, as it also protects from frost and is much cheaper than bleaching with boards.

Winter varieties of radish may be sown early in September, harvested before severe frosts, and stored in sand in a cool cellar. Just before using, if thrown into cold water for a short time, they will regain their crispness.

Spinach for cutting early in spring should be sown this month. Protect by frames or other means through the severe winter.

Why not plant a few Egyptian tree-onions, or winter top sets, this fall? They start so early in the spring that they are ready for use long before any other onion can be had. Plant before the middle of September.

The tuberous chervil is much esteemed by those who know its value. It is perfectly hardy and like the parsnip, the better for frosts. The seed may be sown in September. Try a packet.

Why not try to grow a few mushrooms this fall? You may not succeed the first time, but what's the difference? The novelty of the experiment is worth the trouble.

THE FRUIT GARDEN

After raspberries and blackberries are harvested, the old canes that bore fruit may be removed. Whether or not the tops should be cut back in fall depends largely on the locality. It is safer to leave this operation until spring. Should they have been injured by winter-killing in the meantime, they can then be cut back to sound wood.

Currants and gooseberry bushes are very hardy, and may be pruned any time in fall or winter. New plants may be planted in the autumn. Make cuttings as soon as the leaves fall, store for a short time, and plant later in the season.

BULBS FOR HOUSE CULTURE

Dutch bulbs for winter flowering should be potted in September. If you have not ordered them, do so at once. Then immediately set about getting ready a compost in which to plant them on their arrival. Equal parts of garden loam, sand, and well-rotted cow manure make a good soil. Mix the compost well.

It is well to grow several bulbs in one pot, instead of single specimens. In a six-inch pot, may be put three tulips, hyacinths or daffodils; or six crocuses or snowdrops. The crowns of tulips and daffodils should be about one inch below the surface of the soil. Hyacinths should project slightly above the surface. Provide drainage.

As soon as potted, water the bulbs well. Then set the pots in the cellar or any place that is cool and dark. They will then make roots without starting to grow at the top. A bulb with strong roots, before putting forth leaves, is in a condition to produce good bloom. Leave the bulbs in the cellar for six weeks from potting. By that time they will have made good root growth. By bringing only a portion of them to the window at a time, a succession of bloom may be had. It is best to delay bringing to a warm room. Do it gradually. Place first in an intermediate temperature.

HANGING BASKETS

Many persons fail to grow plants successfully in baskets. The reason is usually found in lack of moisture at the roots. Basket-plants should be watered often enough to keep the soil moist.

Tradescantia is a good basket plant, provided it is given a soil that is not too rich. A rather poor soil will cause the joints to form closer together; therefore the plant will have foliage enough to produce a good effect. Pinching back occasionally will cause it to branch freely.

Sweet alyssum makes a good basket plant for winter. If prevented from ripening seed, it will bloom through the entire season.

The pink oxalis is a charming plant for a winter basket, producing bloom in wonderful profusion from November to May. In September, pot new tubers, or re-pot the old ones, in fresh compost of sandy loam and a little finely-ground bone meal. Next spring, give it a rest by withholding water until it gets dry. Allow it to remain dry until the following September. Then repeat the process.

The othonna blooms freely and is exceedingly cheerful and attractive. Moneywort, a strong, rapid grower, also is good.

One of the best plants for winter baskets is asparagus sprengerii. A plant that has been growing in the pot all summer is not in good shape to give good results in winter. It is best to propagate new plants by division of the tuberous roots. Pot in fairly rich soil and give plenty of root room.

GARDEN CALADIUM

The bulbs of caladium, or elephant ear plant, should be dug early in the fall from the border as soon as frost has touched the foliage. Lay the bulbs in a dry room or shed for a week or two, when they can be packed in dry sand or dry earth, in pots or boxes and stood away in a temperature of 45 to 50 degrees, and safe from mice and rats.

TIGRIDIAS

Tigridias are gorgeous little summer flowering bulbs, natives of Brazil, and are seldom seen in our gardens. Their beautiful tulip-like flowers, so richly marked in such vivid colors, make them very effective during the last month of summer. The bulbs should be dug early in the autumn before frosts, and stored away, after drying them first, in dry sand, in a warm room or cellar, in a temperature of 50 to 55 degrees. A lower temperature is dangerous.

FALL WORK WITH BEGONIAS

As soon as summer flowering and tuberous-rooted begonias in pots stop producing flowers, which is usually about the month of August or early in September, less water should be given them. This treatment should be continued until the foliage is well decayed, then water should be given only when the soil gets moderately dry. The plants can then be put in a light cellar or cool room, where the temperature ranges from 45 to 50 degrees, not higher. About March or April, the plants can be brought out into the window and

re-potted into pots a size or two larger. About one-third of the old soil can be shaken from the roots. Light soil of equal parts bush or leaf soil, potting soil, and sand, with plenty of drainage, suits these plants very well. Avoid too frequent waterings for a few weeks after re-potting. Start these begonias into growth in an east window in a temperature of about 65 degrees.

A Youthful Poppy Fancier

PLANT PERENNIALS IN AUTUMN

Most perennials that start early in the spring can be planted in the autumn, about the last of September or early in October. The common method of propagation is by division. By all means plant peonies. They have so long had a place in the garden, that the amateur flower-lover would be lost without them. Phlox, golden glow, bleeding heart, German iris and many more, also, do better when divided and planted in the fall. Buy extra plants from the nurseries. By planting now, they will become well rooted and accustomed to the change before winter sets in.

WATERING HOUSE PLANTS

A good way to water plants, according to an experienced florist, is to immerse the pot in water, letting it rise an inch or two above the top of the pot. When the bubbles cease to rise it is a sign that not a dry spot is left in the earth. The fault with the ordinary method of watering is said to be that the water does not thoroughly penetrate the earth, the roots remaining dry, while the top is moist. The plants should be watered only when they seem dry.

MISCELLANEOUS HINTS

Seeds of sweet alyssum may be started in pots or boxes in September or October. Dig up a few plants of petunia and phlox and plant in boxes or pots. There is always a place for the bloom in the winter window-garden.

Gather and save seeds from the flower border and beds. It is well worth the trouble to have a few varieties of seed, selected by yourself, for sowing next spring. Dry the seeds slowly for a few days, then store in a cool, dry place.

The best time to prepare the ground for a new lawn is during the fall before. Begin now. Plow or dig deeply and evenly. Drain, if necessary. By doing this now, the ground can settle before spring. Then, any irregularities in the surface may be detected and levelled.

Don't cultivate young trees or apply manure this month. Such practices encourage growth, which may be unable to withstand the cold of winter.

Orchid Growing for Amateurs

DURING the last few years no plant has risen more rapidly in the esteem of the public than has the orchid. No society function is considered complete without a display of orchids, or at least a few of them interspersed with other plants and flowers. The average amateur considers these plants too difficult to grow and as a consequence the supply in Canada has been meagre. However, the success attained by a few orchid enthusiasts and the high prices secured have caused others to begin their culture and a few years more is likely to find them more plentiful.

Chief among Toronto orchid enthusiasts is Mr. Wm. Hill, of Yonge Street. In a small greenhouse, he has a collection of some 50 varieties, including Cattleya, Lælia, Oncidium, Dendrobium, Epidendrum, Cœlogyne, Cypripedium and Cymbidium. Mr. Hill began orchid culture about seven years ago, not as a commercial venture but merely because he loved the work. His present collection shows what success has attended his efforts.

An Orchid Seed Pod

Cattleya orchids seldom go to seed in Canadian greenhouses. This illustration shows a seed pod of Cattleya labiata formed last fall in the house of Mr. W. Hill, Toronto. The seed will ripen and be ready to sow this fall.

"Success with orchids," said Mr. Hill, "lies with the man and the conditions under which he works. Great judgment must be exercised, and their method of culture must be adapted to the conditions under which they are grown.

"The best way for a beginner to make a start is to buy established plants and if he finds that they do well he can undertake to propagate for himself. Growers have to depend on importations from Mexico, South America, India or other tropical or sub-tropical countries, to increase their stock quickly. One of the Cattleya can be made to produce flowers in two or three years from root division, while if grown from seed from eight to twelve years would be required.

"In potting orchids the main object should be to have free drainage. Fern fibre and sphagnum moss is the most satisfactory potting material, but success can be had by planting them in leaf mould. The differing habits of growth and the varying climatic conditions and moisture conditions of the countries to which they are native makes it impossible to lay down strict rules regarding watering. The amount of water supplied should be regulated according to the rainfall of the country from which specimen came. If their native country was one having a long rainy season the plants will need liberal watering.

"Most of the orchids are parasitic on trees or grow on rocks, and so do not thrive in ordinary potting soil, as such soil retains too much moisture around the roots. The watering given, too, must depend on the weather conditions and on conditions in the house. Generally speaking, orchids need less frequent watering than other plants. They do not need so much water as do ferns.

"Some varieties thrive well in house culture. Frequent spraying would be required to make the conditions more congenial, as they do best when there is moisture in the surrounding atmosphere. They absorb considerable quantities through the leaves. Those species that are terrestrial naturally require more root watering. They will stand hardships and neglect but like other plants, do not thrive under adverse conditions. Special attention after a period of neglect soon brings them into thrifty condition again. The Cypripedium is the most common and is most easily grown in an ordinary living room. Cattleya and Oncidium also are plentiful.

THE VALUE OF ORCHIDS

"The fact that they are slow growers makes them costly. Members of the Cattleya family retail in Canadian stores at $2.50 to $10.00 each, according to the size and the number of leaves. Extra large healthy specimens realize as high as $25. Rare varieties have sold at fabulous prices, even by auction. In England $4,600 was realized for a single specimen. When the plants become established, and blossoms appear, however, the successful grower makes handsome returns. Single blooms sell at 50 cents to $1.00 each, while Oncidium and others with few blooms in a cluster easily bring $1.00 to $2.50 a spray. Some varieties produce sprays with 15 to 150 blossoms on a stem."

No window collection should be without a few specimens of these beautiful plants. Their rare delicacy merits extra care and attention, and if once established they will never be discarded.

Seasonable Work in the Amateur Greenhouse

IF you have a greenhouse or a piazza conservatory, repair the benches and heating apparatus, and put it in good condition before the end of the month. There is always something to do, and the amateur florist, who is enthusiastic, never tires of doing it.

Lilium Harrisii, the Bermuda Easter lily, may be potted now. When potting, throw a handful of sand under the bulb. Place the pots in a shady place, until they make roots. Lilium longiflorum, the Japan Easter lily, is an excellent type for spring flowering. It is easier grown than the Bermuda lily, and is freer from disease.

A limited quantity of freesias are useful for cut bloom, and should be potted at once. They may also be grown along the edge of the benches. The foliage being small, they do not interfere with another crop grown on the same bench.

FERNS

Ferns may be successfully grown in the amateur greenhouse. Fern dishes are filled to replace on the table the garden bouquet of the summer. A good supply of these useful plants should be obtained now. Seedlings in flats will do, if of a fair size, or buy small ones in pots. Keep in a partially shaded part of the house and never allow to become dry. Moisture, and a temperature of about 65 degrees, is about all the special care they require. Do not place them on a bench where the heat from the pipes is near the bottom. This often causes them to dry up at the roots, while the surface would indicate plenty of moisture.

CALCEOLARIA AND CINERARIA

Seeds of calceolaria and cineraria may be sown any time this month. These plants are grown to best advantage in a cool temperature. The coolest place in the greenhouse should be selected in which to place the pans. Calceolaria seeds are so small that they should not be covered when sown. Press the soil firmly and water from the bottom to prevent washing the seeds out. Cineraria seed should be covered with finely sifted leaf mould. Do not sow thickly. After the seedlings are up, keep in full light. Give as much air and keep as cool as possible.

STOCKS FOR WINTER BLOOM

Seeds of stocks should be sown at once. Princess Alice has been found to give the best results. Sow the seeds broadcast in a flat. When the seed leaves have developed, transplant into two-inch pots, afterwards shift into four-inch pots, in which they may be flowered. When the first bloom is forming the plants may be transplanted to the bench to remain for the season. By waiting until the flowers are forming, the doubles can be selected and the single plants discarded.

SWEET PEAS FOR CHRISTMAS

Sow the pink Christmas and the white Miss Florence Denzer sweet peas in the first part of September, three to five seeds to one square foot in the bench. If not room ready this time, sow in four-inch pots outdoors, but never allow to become pot bound. When three or four inches high, plant inside one square foot apart, in good compost soil. Keep moist steady. Give as much air as possible. The temperature should be 45 to 50 degrees at night, 55 to 68 in the daytime. These sweet peas, if attended well, will bloom from Christmas to late in spring.

CARNATIONS

We would not advise amateurs to undertake the culture of carnations, either in the house or the amateur greenhouse. The results usually are unsatisfactory, and disappointment follows. Some enthusiasts, however, are occasionally successful. Carnations that have been outside all summer should be potted the first of the month. Use small pots, pot firmly, water well, and shade. Spray the foliage until the plants become well established; then give plenty of sun and spray every sunny day. Water the plants only when the soil shows the need of it.

Shower the plants occasionally to keep off the red spider.

Few plants do well in a north window. But palms, the aspidistra and ferns will flourish there, if particular attention is given to watering.

The Cut-leaved Birch

W. T. Macoun, C.E.F., Ottawa

THE cut-leaved birch is one of the most handsome and graceful of ornamental trees. It is perfectly hardy, and appears to succeed equally as well in the province of Quebec, along the lower St. Lawrence, as in Ontario. Even in Manitoba it thrives well, and may be seen on many a lawn in the city of Winnipeg. It is especially desirable owing to its rapidity of growth, there being few hardy ornamental trees which equal it in this respect. It is of very graceful habit, the pendulous branches giving the tree a soft outline, both in summer and winter. The leaves are deeply cut and attractive in appearance, and begin to develop very early in the spring, a few warm days bringing them to view. It does not live as long as most trees, but its beauty may usually be enjoyed for 30 or 40 years, or longer. The tree at the Central Experimental Farm, Ottawa, from which the accompanying photo was taken, was planted in 1889, when only six feet high. It is now 40 feet in height.

A Grand Lone Specimen of Cut-leaved Birch

Reproduced from a photograph by Mr. F. L. Shutt taken at the Central Experimental Farm, Ottawa

Branching a Rubber Plant

How should a rubber plant be treated to branch it and make it grow tree-shaped?—M. B., Whitby, Ont.

A tree-shaped rubber plant may be produced by heading back the main shoot at any desired height while it is in a free growing condition. The best shaped plants, however, are obtained only by natural branching. The way to induce rubber plants to branch, without the intervention of topping, is to rest them. In the spring keep the plants dry for about two or three months and then plant them in the open or re-pot them. Give lots of fertilizer and plenty of water. When the plants start into growth they will commence to "break"; *i.e.*, produce branches naturally from the axils of the leaves.

The Castor Oil Plant

In beds for tropical effect on the lawn, there is no plant that excels the ricinus, or castor oil plant, for rapidity of growth and grace of foliage. Used either as a specimen plant, with cannas,

Castor Oil Plants in Woodstock

caladiums, or in masses, or as a screen, it gives satisfactory results. Its immense leaves have a rich metallic lustre, and gives the plant a stately appearance.

The castor oil plants in the illustration were grown last year on the beautiful grounds of Mr. J. D. Patterson, of Woodstock, Ont. According to Mr. Thos. Shrimpton, the gardener in charge, the plants came from seeds of *Zanzibarensis* and *Borboniensis* mixed. The seeds were started the first week in April, and transplanted about June 10 to the south side of the residence. In preparing the bed it was dug about four feet deep, and made up of good rich earth and cow manure. It was watered every evening with a copious supply, and about once a week with manure water. The plants grew eight inches after the photo was taken.

Animal and Plant Diseases

Francis Wayland Glen, Brooklyn, N.Y.

Some readers may think that my theory that there is an intimate relation between the contagious diseases which attack man and animals and those which attack plants and trees is chimerical, but there are scientists in Europe and America who have been seeking for years for some cure for cancer in mankind, and one of them, in Sweden, found on a cabbage plant a structure exactly like the cancerous growth on man. He at once inoculated some mice with it and produced cancer in the mice, from which they died in due time. Other animals were inoculated and the same result followed. A

toxin has been discovered that will cure the mice, and it is anticipated that the toxin can be so adjusted as to cure cancer in human beings. These and other experiments of a similar nature show that diseases in man, animals, plants and trees are intimately connected and related.

My mother said to me when a lad working in the garden: "You cannot cheat a cow, hen, hill of corn, or a fruit tree." She said that there was a law common to animals and plants. The roots of a tree are its stomach, where it takes in food and digests it. The leaves are its lungs, where it takes in that which gives life to its sap or blood. The tree must have healthy leaves just as a man must have healthy lungs. The trees in our streets are gradually dying because insects destroy their leaves by midsummer. They have less and less vitality each year, and finally die as a person, with consumption, or are winter killed because too feeble to resist the cold.

The doctors will organize a new profession and can render most beneficent service to the lover of trees, fruits and vegetables. We must learn to treat young trees and plants like children, study their habits, likes and dislikes, temperament, needs, appetites and ailments, and find remedies for their illnesses. They are more human than many of us realize.

A Day with Market Gardeners

EARLY in August, an editorial representative of THE CANADIAN HORTICULTURIST accompanied Prof. R. Harcourt, of the Ontario Agricultural College, Guelph, on a short trip to the market gardens of Humber Bay and Weston, near Toronto. The main purpose of the trip was to observe the behavior of certain fertilizers, sent early in the season by Professor Harcourt to different vegetable growers for experimental work with various kinds of vegetables. In a later issue of THE HORTICULTURIST these and subsequent observations on fertilizer experiments will be published. At the time of the trip, it was too early to record results sufficiently accurate for publication.

The scope of the cooperative experiments with fertilizers, as conducted by Professor Harcourt, embraces work with various fertilizers on tomatoes, potatoes, onions, celery and other crops. Should results show that fertilizers can be used profitably as a partial substitute for barnyard manure, the work will be valuable. On the other hand, should the application of these fertilizers show no results of value, the experiments will be considered by growers as failures.

One of the growers visited has had, so far, no results. Already he is condemning the use of fertilizers, going so far as to say that fertilizers are no good, and that he would not pay a penny a pound for them. This man is a skilful gardener; the general appearance of his crops show it. Yet, he is condemning fertilizers as *no good*. There is a reason for it.

The long-continued use of large quantities of stable manure on market gardens near large cities, has made the soil unresponsive to the action of nitrogenous fertilizers. In the Humber Bay district, manure is used at the rate of 75 to 100 tons an acre. The soil is excessively rich in organic matter and in nitrogenous constituents. A soil over-rich in nitrogen does not require a commercial nitrogenous fertilizer. Such is the condition of affairs on the gardens of Humber Bay.

THE USE OF FERTILIZERS

Before a market gardener can economically invest much money in fertilizers, and before he can intelligently apply such to his soil, it is essential that he consider the value and use of fertilizers from all viewpoints. Soils vary widely in their demand for fertilizers. Gardeners cannot afford to use commercial fertilizers at random; it is time they knew the reason why.

Artificial fertilizers, rightly used, are a potent means of restoring the fertility of soils deficient in one or more elements. They are of value also to start off the plants quickly in the spring. The plant food is available, and acts at once.

For general use, it is usually advisable to use one of the so-called complete fertilizers. If a luxuriant growth of stalk and foliage is wanted rather than roots and fruit, an application of nitrogen in some form usually is advisable. On the other hand, if a soil is producing stem and leaves at the expense of fruit, nitrogenous fertilizers should be used sparingly and supplemented with potash and phosphoric acid.

On some of the gardens visited by Professor Harcourt, tomatoes were going too much to vine; the crop of fruit not only is lessened but also it is retarded in ripening. Rapid growth of vine, due to an over-supply of nitrogenous manures, such as that from the stable, retards the maturity of the crop and, as a result, the advantage of an early-market price is sometimes lost. Further experiments will be conducted by Professor Harcourt to determine the practical value of this well-known theory.

A POINTER ON BEETS

Besides the fertilizer question, other items of interest to gardeners were noted by the representative of THE HORTICULTURIST. On the grounds of Mr. J. W. Rush, Humber Bay, who kindly drove Professor Harcourt and THE HORTICULTURIST man from one farm to another, a method of growing beets was noted that may be worth more general practice. Instead of thinning out the beets to five or six inches apart, as is often done, they are sown thickly and not thinned at all. By so doing they grow more tender and smooth. Continual cropping is scarcely perceptible, as the growth of the beets fills up the spaces made by the removals. By this means an enormous quantity of beets can be harvested from an acre. It should be noted, however, that this method can be followed only on very rich soil.

PLANTING EARLY POTATOES

Early potatoes are planted by Mr. Rush on the level. They are planted as soon as the weather is settled, about April 15 to May 1. By planting them only one and a half inches deep, larger and earlier potatoes are secured.

WHEN TO PLANT CAULIFLOWERS

It was pointed out by one of the gardeners visited that cauliflowers should not be planted too early. Experience shows that cauliflowers planted about May 1 are very unsatisfactory in growth; about May 15, only fair; while those planted about June 1 are always the best. For prime heads, the plants should grow quickly, but the heads should form slowly. When heading, best results are secured when the weather is cool.

ONIONS

Many fine onion beds were seen. Mr. Wm. Harris, Mr. Aymer and others have large crops of good quality. The ground is light, well pulverized, well cultivated and rich. The leading varieties are grown, such as Prize Taker, Yellow Globe Danvers, Southport White Globe, Dutch Sets, Barletta, etc.

Speaking of marketing onions, Mr. Rush said that there should be a definite trade bunch in all parts of the country. Bunches of six each would be better than bunches of three. Such a trade bunch, universally adopted, would do away with confusion that now exists in market reports from the different onion districts.

SOME MARKET GARDEN TROUBLES

Garden crops are subject to the depredations of many insect and fungous

pests. Every year a certain amount of damage is done, and in occasional years, serious loss. A very troublesome insect in Humber Bay and vicinity is the cabbage-maggot. It is difficult to deal with Cabbage sometimes overcome the attack; cauliflower never. Many remedies have been recommended, but none are certain. The maggot is best controlled by preventing the laying of the eggs by means of a repellant. Preventatives in the form of mechanical obstructions, the placing of tobacco dust about the stem of the plant, the application of an emulsion of crude carbolic acid and others have been suggested, but where these crops are grown on a large scale, they have not proved practicable. There is work along this line for our experiment stations.

The onion-maggot is another dreaded enemy of garden crops. It is a near relation of the cabbage-maggot, and works similarly. Up to the present time no efficacious remedy has been discovered. Dusting hellebore or lime, and spraying with soap washes, kerosene emulsion and other insecticides have been tried, but the maggot usually wins out. Here again is a chance for further investigation.

A Michigan farmer states the following experience: "I have found a practical and effective method to get rid of onion maggots. It is to sow bone black fertilizer broadcast over the onions every seven or eight days until the little thrips or green flies leave. The fertilizer does not kill the flies but simply is obnoxious to them and causes them to discontinue their visits to the onions. The writer has not been bothered with this pest since he began using this remedy in 1901. Besides preventing the destructive work of the maggots the fertilizer more than pays for the trouble and expense of applying it in producing a better yield of onions."

Blight on the celery and on onion is quite prevalent in vegetable districts. The latter is difficult to combat. Many growers near Toronto have tried various remedies, notably Bordeaux mixture, with disappointing results. In some cases onions sprayed with Bordeaux are badly affected, while patches immediately adjoining and unsprayed are comparatively free from the disease.

FORCING RADISHES

On the truck farm of Mr. Thos. Delworth, of Weston, an interesting discussion took place on the methods of forcing radishes in greenhouses. It was pointed out that the seed should be sifted and only the largest used. The seed will come quicker and more even. Many small seeds may produce as good radish at maturity as the others, but they take a longer time to grow. Grown inside, they are apt to become spindly. It is important to have all the radishes attain marketable size at the same time. This can be accomplished only by having the seed even in size. And, to hasten maturity, only large seed should be used. Reject all seeds that will pass through a sieve with a mesh one-twelfth of an inch in diameter.

Most gardeners sow the seed in drills thickly and afterwards thin to the desired distance. Mr. Rush practises another method that he claims is better. It produces a more even crop, and tends to prevent mildew and other diseases. Holes for the seeds are made every three inches in rows the same distance apart. Three or four seeds are dropped at each of these points. No thinning is necessary.

SOME PROPOSED EXPERIMENTS

To demonstrate the action of fertilizing elements, singly and in combination with each other, on radishes, Professor Harcourt purposes to undertake some experiments. The work will be conducted, not for the purpose of presenting anything new, but simply to serve as object lessons. Many gardeners hear and read about the action of the various elements on different parts of a plant, and are not convinced. It was suggested to the professor that a bulletin or pamphlet on this subject, dealing with actual experiments at Guelph, and well illustrated with cuts showing the results, would be of great value to market gardeners, experienced men and novices alike. It would be convincing. Seeing is believing. Should the experiments result in the discovery of anything new, respecting the action of fertilizers, their value will be still greater. We shall follow the work with interest.

MUSHROOMS

In the minds of some persons the culture of mushrooms is surrounded with mystery. Mushrooms can be grown, they think, only by the man who knows the secrets and possesses the charm. The business is not for the ordinary gardener. These ideas of the growing of mushrooms are wrong. They are the result of failures on the part of some men who have made the attempt; and they are due, also, to a certain amount of quackery that is practised by some of the men who have been more or less successful. One grower we know, who lives not far from Toronto, told a dozen persons this season that his success with mushrooms is due to a chemical he uses, and which was suggested to him by a tramp. These are some of the reasons for the degree of mystery that enshrouds the very idea of producing mushrooms. But, when the situation is examined, the mystery vanishes. While the cultivation of mushrooms is often attended with uncertainty, there is no secret about it, nothing more than the secret of careful attention to details, the exercise of skill and good judgment.

Among the men who grow mushrooms successfully, and who have no methods in obscurity, is Mr. Delworth. He grows the mushrooms under the benches of his lettuce house. Recently Mr. Delworth harvested, at one cutting, 11¾ pounds off of 280 square feet of bed. The manure for the bed is selected with care. It must be good, neither fire-fanged nor rotten. Before using, it is turned every day for eight or nine days. Fire-fanged manure will produce no mushrooms.

The prepared manure is mixed with soil and packed by layers into beds, 9 or 10 inches deep, evenly and firmly and left smooth on the surface. When the temperature falls to about 85 degrees, pieces of brick spawn are put in about two inches deep and 10 inches apart. The surface, again, is firmed and smoothed.

Muskmelons for Market

W. G. Horne, Clarkson

There are two varieties of melon that, if grown and put on the market in the right condition, would be as much sought after for dessert or eating from the hand as the Early Crawford peach—they are the Rocky Ford and Paul Rose. The conditions in which they should be placed on the market are: first, never ship a melon until it has properly ripened; second, never ship a melon that has ripened on a dead or injured vine; third, ship them in a proper protective package, one that will stand being pitched about like so much stove wood. No discrimination is shown in handling packages by the express companies, whether the contents are of a tender and soft nature, or hard. Follow these directions and you will be surprised at the market that can be made, and a paying one, too, by growing melons in the right way.

Vegetable Notes

Study the peculiarities of the market.

The squash bug dislikes clean culture.

Mineral fertilizers are unfavorable to insects, and to some they are deadly.

When marketing vegetables, no individual of inferior value should be bunched or put up.

A compost heap, which should be started now, is like a penny savings bank. Every little helps to increase the aggregate.

I prefer solid to raised benches in the greenhouse because it does not take very long to run away with much of the profit from the crop if new benches have to be made frequently. Lumber is very expensive.—H. E. Reid, Toronto.

Directions for Preserving Fruits and Vegetables

THE proper preservation of fruits and vegetables for winter use is an important question for the housekeeper. A bulletin on this subject, recently issued by the Wisconsin Experiment Station, contains many useful recipes and suggestions. While the recipes were worked out largely with native fruits, they will apply equally as well for preserving the domestic varieties of Canada. The following extracts may be of value to the lady readers of THE HORTICULTURIST:

It is important that the fruit intended for canning should be in the right stage of ripeness; it should be firm, having attained its full size and normal color. It should be free from all kinds of blemishes, such as scab, rust, rot, and all forms of insect life. Fruit intended for canning in any way should be utilized as soon as possible after it is picked. If left standing for hours, even if the fruit is not over-ripe, the fine flavor is lost and the keeping qualities greatly impaired.

SELECTION AND PREPARATION

In selecting fruit for canning, it is advisable not to mix the different varieties together; for example, if plum preserves are made, each lot should be made from a distinct variety, or a combination of flavor will be the result, besides some varieties require more heat than others, thus giving the preserved product a lack of uniformity. To insure success in putting up fruit, a few precautions must be observed; namely, fresh perfect fruit, absolute sterilization of all utensils, the best grade of sugar, and other materials used.

NOTES ON MAKING PRESERVES

When fruit is put up by the oven method, either cover the oven with heavy asbestos paper and cover the jars with the same paper, or place the jars in a dripping pan with a little cold water in the pan, and place a pan over the jars, as the fruit cooks faster in the top and may turn a little dark if not covered.

In making preserves, different fruits require different amounts of sugar; if a heavy syrup is wanted and no syrup gauge is at hand, use just enough water to liquify the sugar and heat very slowly as sugar often crystallizes in the bottom of the jar, if boiled rapidly, and the fruit will not be sweet enough. In making syrup, when it begins to boil, run a wet cloth carefully around the edge of the pan, to take out the impurities in the sugar, leaving the syrup clear.

A good way to prevent moulding and improving the general keeping qualities of preserves is to cut out circular pieces of paper to fit over the preserves. Before placing it over the preserves dip in melted paraffin and on top of this paper pour melted paraffin, making a layer an eighth of an inch in thickness. Paraffin may be obtained at any drug store and is both cheap and effective.

DIRECTIONS FOR MAKING JELLY

Fruit for jelly is best gathered a little unripe. Jelly made from fruit gathered after a heavy rain will require a greater amount of boiling, and in some cases will not "jell" at all, owing to the lack of the starchy properties contained in fruit. This, however, may be put into jars and sealed and used for mince meat.

Great care should be used in skimming jelly. The juice should not be stirred, but the scum skimmed off carefully. If allowed to boil over, the jelly will not be clear.

In putting the jelly into glasses, sterilize the glasses, and drain them thoroughly; otherwise, air bubbles are apt to be in the jelly. When filling, fill each glass full before attempting to fill the next, as jelly will slide off in layers when turned out if put in a little at a time. Boil only a small amount of juice at one time, and use a shallow pan, as the water evaporates faster in a shallow pan, allowing the juice to "jell" in less time. Some people think that fruit that is not fit to can or preserve is all right for jelly, but this is not true. Perfect fruit is more essential for jelly than any other way of caring for fruit. Soft ripe fruit may be used for jams or marmalades.

Fruits such as strawberries, raspberries, peaches, which will not jell easily, make beautiful jelly if one-third rhubarb juice is used and the flavor is not harmed by such addition.

NEW WAY OF MAKING PLUM JELLY

A new way to make plum and other jellies, is to place the fruit dry in jars. Two-quart jars are good. Either place the jars in the oven in asbestos paper or in a fruit steamer and cook till fruit is tender. Take out and strain through a flannel bag. Add as much sugar as juice, and stir until the sugar is dissolved. Place on the back of the stove and heat slowly until it forms jelly drops on the spoon. During boiling skim carefully. It will take but a little boiling as this is pure juice. This process produces the clearest and finest plum jelly.

The pulp may be used for jams or butter by straining through a sieve and adding equal amount of sugar and heating slowly till thick enough. Place in jars and seal as usual.

MAKING APPLE JELLY

Cut the apples into quarters. They should not be cored or peeled. Cover with water and cook till tender and strain. Let stand an hour or more and strain through a flannel bag. Measure out the same amount of sugar as juice, boil the juice fifteen minutes before putting in the sugar. Stir until the sugar is dissolved and boil slowly till it jellies in a spoon. Plum juice may be added if a plum flavor is desired. Apple jelly often lacks a decided flavor and this can be enhanced by adding a small quantity of plum juice.

CURRANT JELLY

Wash and mash the fruit well, let stand a little while and strain. Put the juice in a stone jar and place in the coolest part of the cellar for 24 hours. Then remove the scum which will form on top, strain through a flannel bag and measure pound for pound of sugar and juice and stir till the sugar is dissolved. Put in glasses and seal. In 24 hours you will have a perfectly transparent jelly. No heat is required.

MAKING PLUM PRESERVES

Plums are always nicer peeled and it is easily done by placing the fruit in boiling water for a minute or two, then pouring on cold water. The skins will then slip off easily. If plums are to be canned with the skin on, either prick each plum with a darning needle or cut one side to the stone so that they will stay whole. Some varieties require more sugar than others.

CANNED PLUMS

Make a syrup by using pound for pound of fruit and sugar, or less sugar if not so rich a sauce is wanted. When the syrup is boiling add the fruit. Cook till tender, and carefully remove the fruit and place in jars. Fill up with the syrup and seal.

BAKED PLUMS

Sort the fruit, wash and let dry, then put the fruit into sterilized jars and place the same in the oven which should be lined with asbestos paper. Cook till the fruit looks clear, not soft. Open the oven door carefully so as not to let the cool air in suddenly as it may break the jars. Lift the jars out, place the rubbers on, fill with the boiling syrup and seal hot.

STEAMED PLUMS

Treat the fruit the same as in the foregoing recipe, only place the jars in a steamer and steam till tender, fill with hot syrup and seal.

(Continued next issue)

To see your hands in a basin of water at frequent intervals when peeling fruit for canning or preserving is a sign that you have your share of that which is next to godliness.

OUR QUESTION AND ANSWER DEPARTMENT

Readers of The Horticulturist are invited to submit Questions on any phase of Horticultural work

Marking Apple Barrels

In the recent amendments to the Fruit Marks Act, were the XXX, XX and X marks done away with?—D. H. W., Trenton, Ont.

No. Any number of X's may still be put on a barrel, but the No. 1, No. 2, or No. 3 mark has been made obligatory. It is absolutely necessary that one of these marks or "Fancy," which has been defined, be placed on the package of fruit.

Fall Planting of Strawberries

Do you advise planting strawberries in the fall?—R. A. B., Renfrew, Ont.

No. Strawberries planted in the fall do not make enough new plants to produce even a normal crop the next year. Plant strawberries in the spring, remove all blossoms that season, and in one year from planting an abundant crop may be expected.

Beer's Late Peach

Is Beer's Late a profitable peach for market purposes?—M.W.F., Essex, Ont.

Beer's Late is practically the same as Crawford's Late, which is well known as a fair commercial peach, but not grown so much now as formerly.

Crimson Ramblers

I have a Crimson Rambler that has grown very ugly. There are two long limbs with a few leaves at the top. The few flowers that come are insignificant, not larger than a button. Can it be made healthy and vigorous?—M. N., Toronto.

When a rambler becomes as unruly as this, probably the best treatment is to cut it out and replace with a new vine. A less heroic measure, however, would be to prune back the limbs to within a few inches of the ground. Do this next April, just before the buds start. This fall apply a heavy mulch of manure and in the spring dig it in. During the summer months, a rambler needs a lot of water, overhead and at the foot. As fall approaches the waterings should be stopped gradually, thus bringing about a normal and thorough-going process of ripening.

Rose Insects

Kindly advise what remedy to use for the little insects that are eating the leaves of my rose bushes? The vitality of the bushes seems to be much impaired.—J. McK., York Co., Ont.

Two kinds of insects are prevalent on roses in this country; the rose chafer and the rose leaf-hopper. The rose chafer is difficult to combat. The best treatment is to gather them daily by hand, tossing them into a vessel containing a little coal-oil; or jar them off the plants into a funnel-shaped collector so made as to roll them through the centre into a pail containing kerosene. The arsenical poisons are too slow in their action, and contact remedies must be applied too strong for the plants to kill the insects.

The leaf-hopper may be kept off the bushes by a forceful spray of clear water applied early in the day or again at evening. Those without the facilities for spraying with water may use kerosene emulsion, applied with an old broom, or insect powder dusted on the plants when they are wet.

Tussock Moth on Trees

A caterpillar is ruining my horse-chestnut trees. Is it the Tussock Moth? Please describe it, give its habits, and suggest remedies.—Mrs. M. N., Toronto.

The larva of the common Tussock Moth (*Notolophus leucostigma*) is one of the worst enemies of horse-chestnut, basswood, and other shade trees. In Toronto, the species is very destructive. The caterpillar, about one inch long, is easily identified by the following markings: Bright red head, resembling sealing wax, just behind which is a conspicuous coral red mark; and yellow body, bearing four white brush-like tufts, and a wide black band on the back, two long black plumes near the head and one at the anal end.

The most important points of economic importance in the life-history of this moth is that the female is absolutely incapable of flight; the insect winters in the egg stage; no eggs can be laid upon a tree until a caterpillar has first made its way upon it, and has changed to a female moth. Herein lies the suggestion for a remedy.

During winter remove all the egg masses, which are easily found, and destroy them. In Toronto, it lies altogether with the civic authorities to stamp out the pest. Professor Lochhead suggests that bonuses be offered to children for every egg cluster collected. Second, prevent the caterpillars from crawling up the tree from surrounding points by means of a bandage around the trees. Any substance, sticky or otherwise, that will arrest the march of the caterpillar, will answer the purpose.

Fuchsias for Winter

Is the fuchsia a good house plant for winter?—R. M. A., Barrie, Ont.

Fuchsias are not good winter plants for the house. One or two varieties, notably *speciosa*, will succeed fairly well in winter with special treatment. Spring and summer is the proper season for fuchsias to flower. They should be rested, or kept dormant in a cool room or cellar, during winter, in a temperature of about 40 degrees; then brought out about April, and re-potted as soon as they show signs of growth.—Answered by W. Hunt, O.A.C., Guelph.

White Grub in Lawn

The grass on my lawn is turning brown in spots. In taking up the sod, it comes up in sheets, the roots being eaten off. What is the best course to pursue?—E. F. W., Amherst, N.S.

The trouble is due to the larva of the May beetle or June bug. Many lawns are ruined by this pest. Robins are fond of the grubs. If a part of the sod is turned every few days, robins will devour many of the grubs. It is said that an application of a fertilizer (kainite, 3 lbs.; nitrate of soda, 1 lb., to sq. rod) will make the soil distasteful to the pests. Reseeding may be necessary. This may be done in September, but spring is the best time.

Shipping Tomatoes

Has any attempt been made to ship tomatoes to Great Britain, and if so, what were the results?—M. J. L., Prince Edward Co., Ont.

The only attempt of this kind that we know of was made some years ago by Mr. A. W. Peart, of Burlington, Ont., who made trial shipments for three years in succession. Each year Mr. Peart sent four boxes that held two 12 qt. baskets each. The first year he obtained $1.44 a box, on which the total transportation and other charges amounted to about 60 cents, thus netting him a nice margin of profit. The second year the tomatoes were decayed when they reached the consignee, and the shipment was a failure. The third season, the tomatoes were in a yellow condition when they reached their destination, and sold for 48 cents. The results of the two last years' shipments were so disappointing that Mr. Peart became discouraged and decided not to make further shipments until the cold storage and transporting facilities were better adapted for the shipping of these fruits such a distance. The variety shipped by Mr. Peart was the Honor Bright. There has been such improvement during the past few years in the cold storage facilities for shipping perishables of this nature that the time seems ripe for further experiments.

Use lime water for worms in potted soil.

The Canadian Horticulturist

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The Only Horticultural Magazine in the Dominion

Official Organ of British Columbia, Ontario, Quebec and Prince Edward Island Fruit Growers' Associations and of the Ontario Vegetable Growers' Association

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GREAT BRITAIN

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THE CANADIAN HORTICULTURIST
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A GREAT NATIONAL ORGAN

In pursuance of our declared intention to make The Canadian Horticulturist a paper of national influence and of international renown, we hereby announce an important change in policy. In future the regular subscription price will be 50 cents a year instead of one dollar a year. New or renewal subscriptions will be accepted for periods of three years for $1.20. This means that our regular price for yearly subscriptions has been cut in half, and that the reduction, in the case of three year subscriptions, is even greater. In spite of this great drop, it is our intention to not only maintain the present standard of the magazine, but to further improve it in several important respects.

The decision to lower the price of subscription was reached unanimously at a meeting of the shareholders of the Horticultural Publishing Company held early in August. It was the feeling of all present that it would be better to obtain a circulation of 10,000 to 12,000, within the next couple of years, at the 50 cent subscription rate, than to have a circulation of 5,000 to 6,000 at the one dollar rate.

The facts are these: Most of the leading fruit, flower and vegetable growers of Canada are already subscribers for The Canadian Horticulturist. These men have not hesitated to pay one dollar a year for the magazine, and have considered it cheap at the price. On the other hand, there are thousands of people in Canada who are interested in horticultural matters in only a small way. These include thousands of farmers with three to ten or more acres of apple orchards as well as many people in cities, towns and villages who are growing flowers on an amateur scale. But few of this class of people are now taking the paper. We desire to reach them also.

Experience has demonstrated the fact that these people will not pay one dollar a year for a magazine that is published only once a month. It is necessary, therefore, if their subscriptions are to be gained and retained: first, that we shall offer The Horticulturist to them at a price that will lead them to subscribe; and, second, that the quality of the paper be such that they will be glad to renew their subscriptions when they expire. It is this that we intend to accomplish.

In adopting these new subscription rates we are following a policy that has proved successful with the leading fruit papers of the United States. The *Western Fruit Grower* and the *National Fruit Grower*, both of which are monthly fruit papers, having a circulation each of over 35,000, both built up their subscription lists by accepting subscriptions at the rate of 50 cents a year and at still lower prices for long term subscriptions. The *Southern Fruit Grower* and *American Fruits*, two other well-known United States publications, are circulated on the same basis. We have decided, therefore, that The Canadian Horticulturist shall not be outdone by the fruit papers in the United States. Instead, its circulation will be pushed on the new basis from one end of the Dominion to the other, until we have built up a subscription list that will make the magazine not only a decided financial success but one of great influence and power.

The growth of The Canadian Horticulturist during the past five years has been phenomenal. No other magazine in the Dominion has made more rapid progress. Not only has it been doubled in size, but for five years in succession its receipts from advertising have doubled each year. This progress has been most gratifying to the management. The only point in which improvement has been slow has been in that of circulation. On the new subscription basis it is believed that the solution of this difficulty has been found. A bright future for the magazine, therefore, is anticipated.

At the shareholders' meeting it was decided that to enable the making of further improvements in The Horticulturist, and to permit of an energetic subscription campaign, it would be well to issue $10,000 more stock. A considerable portion of this stock was subscribed at the meeting. The remainder will be reserved for one month to give the present shareholders an opportunity to increase their holdings, after which the balance, if any, may be offered to our readers.

The fruit industry of Canada, during the past few years, has shown phenomenal development. The next few years promise to show even greater progress. New markets are opening in the west with great rapidity. The in-rush of population is so immense that the consuming capacity of our eastern centres is showing a marked increase. The better standing of our fruit in the British markets, and the improved cold storage arrangements on our railway and steamship lines, will greatly extend the European outlet. All this means that Canada needs a live, aggressive paper dealing with horticultural matters, and it is our aim to fill this need by means of The Canadian Horticulturist.

A NEW COOPERATIVE MOVEMENT

The organization of an Ontario Cooperative Fruit Growers' Association is an event of more than ordinary import. It marks another step in the movement that is helping to obtain for the growers full value for their crops. Being founded on a strictly commercial basis, it will assist the local cooperative associations to eliminate many of the evils that beset the Canadian fruit trade.

One of the greatest of these evils is the irresponsible buyer. Every year many growers are defrauded by sharpers. They sell their fruit to men who have carefully and deliberately laid plans to rob them. These men buy as many barrels as they can secure, making only a small advance payment, ship them to the Old Country, and go back to the grower with tales of disaster, injury in transit, a glutted market and others equally false. The grower is forced to accept whatever he can get, because, unfortunately, he can get no redress. The buyer is irresponsible; he has no property in the section by which the grower can obtain recompense. The buyer, rejoicing in the ease with which it was done, moves off the next year in search of a new field to exploit.

There are other defects in the condition of our fruit industry. Having no storage facilities, growers, acting individually, are forced to rush their fruit to market. This tends to glut the market and the grower suffers. He should be in a position to obviate this feature of the trade, but he is not, so long as he acts alone.

The individual grower seldom has fruit in sufficient quantity to warrant responsible buyers visiting him. The fruit may be good and well packed, but, as no two men in a locality have equal ideas on what constitutes a correct pack, the packing of fruit in such a locality is not uniform. Buyers know this, and steer clear of such localities, or gather in the fruit at ridiculously low prices.

Even when buyers do visit him, the individual apple grower is, as a rule, at his mercy. Having little or no definite information regarding the condition of the market and of prices being paid, the grower, generally, is forced to accept what is offered. Frequently apples that net the grower $1.50 a barrel, sell on the market for five, six or seven dollars. Between the grower and the consumer there is a line of middlemen that appropriate to themselves the profit that proper management would bring to the growers. Some of these middlemen should be eliminated.

These are some of the evils that cooperation is helping to overcome. Cooperative associations, usually, have large quantities of fruit at their disposal. This enables them to store their fruit when it is advisable to do so, to sell direct to responsible firms and to demand cash for every sale made. They are in a position to put up and offer a uniform pack, and to ask a high price for it.

The cooperative movement in Ontario is of recent origin, but it has shown wonderful advancement. This year one-tenth of the crop of the province will be handled by the cooperative associations; five years ago, it is doubtful if 5,000 barrels were put up in this way. The increased interest is due to the soundness of the principle having been demonstrated by the larger profits that have been realized on fruit thus handled.

A number of the cooperative associations in Ontario have been eminently successful. At first they found no difficulty in disposing of their crops. More recently, through lack of cooperation between them, their salesmen have competed against each other, and prices thereby have been affected injuriously. This has shown the need for still another and a more advanced step in the cooperative movement namely, cooperation among the cooperative associations. This now has been accomplished. In future, instead of several associations sending salesmen to the west or to Great Britain, and where possibly they might compete with each other, the central organization will be able to send one man, who thus will be able to maintain prices. In the past the local associations have had no means of knowing what the other associations were asking for their crops, or the prices being paid in the different sections. Through the new provincial organization each association in future will be kept informed in regard to the prices prevailing in the other parts of the province. Through the influence of the newly organized Provincial Association, the larger associations now will be able to help the smaller, and therefore, weaker, organizations.

The value of the Ontario Cooperative Fruit Growers' Association will be far-reaching. Other provinces may fall in line. British Columbia, for example, has a number of local associations. It is probable that she will follow the example of Ontario and organize a provincial organization. Thus will be welded

another link in the chain that ultimately will bind, as one, the fruit growers of Canada from the Atlantic to the Pacific.

A CHANGE NEEDED

The feeling is growing that the constitution of the Ontario Fruit Growers' Association should be revised. It is felt by many representative growers that the present method of electing the board of directors is not altogether satisfactory. They desire to see some arrangements made by which the fruit growers in the different parts of the province will have more say in the election of the officers that are supposed to represent their districts. As this is a matter that, probably, will be discussed at the annual convention next November, a few words at this time should be in order.

In the first place objection is taken to the directors all being elected at the annual convention. The expenses of the directors, while attending the convention, are paid by the association. This enables them to re-elect themselves into office year after year, practically without opposition, as concerted action by the other fruit growers present is difficult. As a rule the number of fruit growers who attend the annual convention from outlying points is limited; the result is that the rank and file of the growers in the different sections of the province have no say in the election of the directors on the board of the Ontario Fruit Growers' Association who are supposed to represent their districts. The fact is, there are very few fruit growers in Ontario who know who is their representative on the board.

Some years ago, when the horticultural societies of the province and the fruit growers' association were affiliated, provision was made by which the horticultural societies were to be represented on the board of the fruit growers' association. This arrangement is still in force, although all connection between the association and the societies has been severed. The directors of the fruit growers' association include some first-class men, who, however, represent the horticultural societies more than they do the fruit growers of the province. Now that there is an Ontario Horticultural Association, representing the horticultural societies, it would seem as if these men would be in a position to do better and more valuable work were they identified with the latter organization rather than with the fruit growers' association.

At the last convention of the association, the constitution was so amended as to provide for the affiliation of the members of the local co-operative fruit growers' associations with the Ontario Association. This year the members who attend the convention will not be far astray if they go one step further by doing away with the present method of electing directors and giving the various fruit growers' associations throughout the province, having a certain number of members, the right to appoint one director each. This would give the fruit growers, in the sections where these local associations have been organized, the right to elect their own directors on the board of the provincial association. As these associations have been established in all the leading fruit sections of the province a board so elected would be even more representative of the province than is the case now. The directors appointed in this way would be men who are actively connected with the production and sale of fruit and, therefore, thoroughly competent and peculiarly well fitted for positions on the board of the Ontario Association. Such an arrangement would be on the same lines as those that are proving so signally successful with the Ontario Vegetable Growers' Association. The latter association, although drawing a government grant of only $600, has 150 more members than the fruit growers' association, with a grant of $1,800.

We believe that the present officers of the Ontario Fruit Growers' Association are thoroughly competent men, who have accomplished much valuable work for the fruit interests of the province. The fault is not with them, but with the system under which they are elected. The change we suggest would not necessarily lead to any very great change in the personnel of the board. Of the present directors Messrs. W. H. Bunting, Murray Pettit, A. E. Sherrington, W. H. Dempsey and Elmer Lick are connected with cooperative associations that would be able to re-elect them to positions on the provincial board. This suggestion is not made with the object of driving any of the present directors off the board, but in the hope that some change will be made in the constitution of the association that will bring the association into more direct touch with the fruit growers of the province and thus add to its power and usefulness.

RELIABLE BRITISH FIRMS

In the July issue of THE CANADIAN HORTICULTURIST, we directed attention to the fact that in London, England, there are many firms that receive fruit by direct consignment that are dishonest. The reputation of some of these firms for crooked work is so well known that our representative, while in Great Britain, refused to accept advertisements from them. Every precaution is taken to see that only reliable firms advertise in THE CANADIAN HORTICULTURIST. When in England our staff representative took pains to investigate the reliability of all firms that desired to advertise in our columns. For this reason we can, with confidence, recommend to the Canadian apple producer and shipper, those British firms that solicit consignments of fruit in this and subsequent issues of THE HORTICULTURIST. We have reason to believe that these firms are reliable, and that they will pay top prices for high-grade fruit. It behooves the Canadian grower to exercise particular care in packing and shipping. No British firm can be expected to make satisfactory returns for fruit that does not arrive true to name and grade, honestly packed and in marketable condition.

When disappointing returns are received by Canadian growers, some of them complain that they were unfairly dealt with. This may or may not be the case. It is the purpose of THE CANADIAN HORTICULTURIST to assist both buyer and seller to determine the authenticity of such complaints. We are pleased to announce, therefore, that Mr. W. A. McKinnon, Canadian Commercial Agent, Bristol, has kindly agreed to act as arbitrator at that point. Any Canadian shipper may secure the services of Mr. McKinnon at any time that a consignment arrives at Bristol. Mr. McKinnon will examine and report the condition of the fruit when sold, and the shipper may compare such with the report from the consignees. This will tend to eliminate some of the obstacles in the way of reputable dealing. We hope to be able to secure the services of similar impartial referees at other leading British importing centres. This, however, is a work that properly belongs to the Dominion Fruit Division under the dairy commissioner.

A COMPLIMENTARY LETTER

The following letter from Mr. Alex. McNeill, Chief, Fruit Division, Ottawa, was addressed to the members of the newly-organized Ontario Cooperative Fruit Growers' Association:

"Let me congratulate you upon organizing the Ontario Cooperative Fruit Growers' Association. While we made some attempt last year to secure a union of the cooperative associations, the occasion was not ripe; nevertheless, we foresaw that very quickly all the evils of competition would again be felt almost as keenly as among individuals if there were no cooperation among the associations themselves. I am pleased to note that you are making the commercial side of the association the chief one. There is no reason why the Ontario Fruit Growers' Association should not take up all other lines of work, but experience has shown that when it comes to the purely commercial side, even the Provincial Association falls down. The new association will find ample work for itself in taking up the purely commercial side.

"You may rest assured that the Fruit Division will assist the cooperative associations in any way possible. Any information we have with reference to crop reports and sales is at your disposal; and we will also be glad to have your assistance in securing uniform grades in the packing of fruit in the province.

"I note what you say with reference to a fruit inspector visiting the associations frequently. This is only fair. The local associations are practically working along the same lines as the Fruit Division, to secure a good and an honest pack, and the Fruit Division, as far as it lies in its power, will not only impart all the information which it has, but will protect the good name of the associations by watching carefully the 'weaker brethren' to see that they do not lower the standard or otherwise injure the good name that the cooperative associations have been able to make.

"You will be pleased to note with reference to your second request that arrangements have already been made for an expert packer from the Pacific Coast to give demonstrations in box packing. He will visit nearly, if not all the associations of your membership in the near future. Full particulars of these demonstrations will be forwarded to you within a few days."

TORONTO HORT'L SOCIETY

The Toronto Hort. Soc. has organized a woman's branch to help further the interest already taken in the work by members in general. The interchanging of ideas, suggestions, etc., that will prove helpful in the home, will be of value to the ladies. The society purposes holding frequent meetings, with practical talks. Demonstrations will be made in the tasteful arrangement of flowers. A plan will be instituted, commencing in a small way, to help those who cannot afford plants and shrubs. The poor sections of the city will be made more attractive and bright. The officers of the woman's branch are: Chairman, Miss M. E. Blacklock; sec., Mrs. F. Abbott.

Owing to pressure of space in the last issue of THE HORTICULTURIST, we were unable to report that the Toronto Hort. Soc. held its annual excursion to Niagara Falls in July, and spent a most enjoyable day. The chief interest centered in Queen Victoria Park, over which Supt. R. Cameron escorted the visitors, who were thus afforded an opportunity of gaining much valuable information regarding the splendid collection of annuals, perennials, etc., which Mr. Cameron has under his care. A week before the excursion the soc. had the pleasure, by invitation of the pres., Mr. H. R. Frankland, of visiting his home, where they were shown over the "old plantation" and afterwards spent a very pleasant evening listening to, the excellent music provided by an orchestra while Mrs. Frankland, assisted by her daughters, served dainty refreshments.

That the Essex peninsula can grow high-class muskmelons—the kind that are tempting, fragrant and delicious—has been proven to THE HORTICULTURIST in a very practical way. We received a basket of nice ones from "Peach Bluff Farm," the large fruit and vegetable establishment of Messrs. Hilborn and Atkin, of Leamington. Many thanks.

We are offering The Canadian Horticulturist during September for a mere song. A postal note to the tune of $1.00 will pay for 4 new subscriptions for a year.

Marketing Early Apples

J. F. Scriver, D.F.I. Montreal, Que.

There are almost enough early apples raised on the Island of Montreal now to supply the local market and growers living outside a radius of 10 miles of the city must look elsewhere for a market. It has been shown in the last three years that these apples can be marketed in Great Britain at paying prices.

Pick the Duchess when fairly well colored, and not when they are small and green. On the other hand do not allow them to become too ripe, as they will not carry well then. Pack them in boxes, and guard against them becoming heated. It would be better to ship them to one of the cold storage warehouses in Montreal and allow them to remain there a few days to become thoroughly cooled. Ship in cold storage on steamer, and you will receive satisfactory returns.

I would advise shipping to Glasgow if packed in boxes. Wealthies and Alexanders should be handled in the same way, although these apples have brought good returns packed in barrels. However, the extra price received would more than pay the extra expense.

I would never advise shipping St. Lawrence apples to the old country market, They do not seem to want them there, and often very low prices are secured. The Winnipeg market is the place for them. Pick them on the green side, cool thoroughly before loading, and ship in refrigerator cars. There are two rules that must be observed in exporting early apples. The first is, do not allow the apples to become ripe before picking; gather when on the green side just when well colored; the second and most important rule is never to allow fruit to become heated. Ship only when well cooled, and if you cannot ship in this condition, it is better to allow them to rot on the ground, because it will result in heavy loss.

Enterprising Fruit Growers

At the annual meeting of the St. Catharines Cold Storage and Forwarding Co., of St. Catharines, a committee was named to act with the directors in making shipments of fruit to the Northwest during the present season. This committee has made arrangements for the work. With the experience of the shipments of last year and the advice of Robt. Thompson, the president of the company, who spent some six weeks last spring in the fruit districts of B.C., studying their methods and consulting with the wholesale houses in Calgary, Moosejaw, Regina, Brandon and Winnipeg, they feel that they can look forward to some degree of success. They have adopted a set of rules to govern all shippers and every man is required to sign them.

The rules or regulations in brief, are: That each shipper agrees to fill a certain space in each car or give 5 days' notice of inability so that the committee can procure suitable fruit to fill same; that two cars be forwarded each week, unless lessened by order of majority of committee; that uniform packages be used, also a uniform system of branding names of shipper, varieties and grades on all boxes.

A carload of apple, pear, plum, peach and tomato boxes have been ordered from New Westminster, B.C. A trade brand has been adopted for the western shipments and can be used only when approved of by the committee. All fruit in these boxes is to be packed according to directions and is subject to inspection by a sub-committee to guarantee uniformity. All grapes with brand on have to weigh a standard weight per bskt. All fruit has to be delivered at the cold storage building on the day previous to shipment to enable it to be chilled before going into the refrigerator car. The railway companies are to be consulted so as to ensure a supply of cars and quick despatch. Arrangements are being made to ship to the Ottawa Fruit Exchange in Winnipeg and to wholesale men in the west. The shippers who sent the bulk of the 30 cars last season are making preparations to pack in boxes and wrap a portion of the fruit. Some of the shippers have sent a few crates of strawberries and cherries by express to a few of the western towns to see if they will carry successfully.

Prince Edward Island Letter

Rev. Father Burke, Alberton

Concerning the work in horticultural instruction, undertaken in early spring, Inspector Burke writes as follows: "Horticultural meetings were discontinued for a time during the haymaking season. I do not know whether these will be resumed this season or not.

"The prospect is fairly good for the apple crop, but the quantity of fruit set is not so large as was promised. Plums and pears will be a light crop. Cherries were a good crop; small fruits abundant."

The view of the instructor, who has gone over the province, agrees with our own with respect to the crop. It will not be as abundant as first indications promised. Small fruits are now being picked. They are in abundance, but apart from strawberries, there is no regular profitable market for the quantities grown. We have but a couple of local jam factories, and they are only on a small scale. There should be a big preserving concern here. The best jams and pickles could be profitably put up. Proximity to the maritime markets should secure good sales for pure products. There is no word of the elevation of the Fruit Division to a commissionership yet; indeed, the live stock commissionership is now taken away and made an appendage to the Health of Animals Department. Queer things happen sometimes before people get back to their senses. What has the health of animals to do with formal organized stock breeding? And what has butter and cheese in common with fruit?

There is complaint in New Brunswick, too, because their inspector is not a permanent officer and employed in instruction, as the inspectors elsewhere. Our inspector has only a temporary mandate, although he should be on the regular staff, and we must agitate till he is.

Fruit Notes from Montreal

E. H. Wartman, D.F.I.

The Island of Montreal, noted for Fameuse apples, will come far short of a full crop this season; about 50% clean, and of good size. This variety comprises 75% of the fruit production of the island.

The market for raspberries of all kinds has been firm. The uniformity of baskets in size is quite noticeable, and largely accounts for the good condition fruit has arrived in this season. A uniform berry crate would now be in order so as to pile snugly in cars, to prevent oscillation and to insure good condition at distant points.

Early apples, Duchess, E. Harvest, Astrachans, have been arriving in large quantities in 11 qt. bskts. and have sold well. Bbls. of same varieties are coming in slowly.

The grading of peaches, showing honest face, is becoming very satisfactory to the trade. Fruit men, in general, are making money on account of satisfactory packages and grading of fruit.

The banana trade is increasing annually. One firm received 7 cars in 1 day, 2,500 bunches, which would aggregate $3,000 in cash.

The Can. Express Co.'s method of handling large quantities of fruits should be commended. When morning express arrives, fruit cars are shunted alongside their commodious shed. Lattice gates are used for ventilating. These are locked; no one but consignees are allowed in until each man's lot is piled and checked. Then buyers are let in. Many sales are made through the grating, so that when shed is open to public, one-half of consignments are sold. Then comes the double checking. Every man who has any packages to bring out has to have a check bearing the number of packages. Men at doors collect these checks, which, when added, should make up the sum total.

The hot weather has commenced to show on early peaches and tomatoes. When skin is broken, juice soon ferments and goods soon become unsaleable. It is hoped that western shippers will continue to ship in the same good style which has been a characteristic of the past few weeks, and they will be handsomely remunerated.

Peaches for North-West

"Peach growers have not yet solved the problems of picking and packing for the Northwest," remarked Mr. F. B. Henry, formerly of Winona, who has spent many seasons on the ground and closely in touch with the western fruit trade, to a representative of THE HORTICULTURIST. "As a rule, Ontario growers pick their peaches too green. This is a mistake. Peaches for long distance shipping should be fully mature, but not ripe. In all cases that came under my notice, peaches well matured kept better than those picked on the green side of maturity; and also such brought at least 20 per cent. higher price."

Some varieties of peaches will ship farther than others. Crawford can be shipped with safety only as far as Winnipeg, while Elberta can be laid down in good condition in Brandon, and even farther. At present, most all our peaches in the West are sold for dessert purposes. The canning season is over there when Elberta arrives. We need an early peach that will carry to that market. This is work for the new Niagara Experimental Fruit Farm. By originating such a variety, the Government will aid the Ontario grower to compete favorably with growers from across the line.

Vegetables in Cold Storage

"I tried some experiments keeping vegetables in cold storage last season," said Mr. J. W. Rush, of Humber Bay, to a representative of THE HORTICULTURIST, "but the results were not altogether satisfactory. Thirty cases of cauliflower, 20 barrels of spinach, 300 roots of celery and a quantity of cabbage were placed in cold storage for two or three months.

"The spinach and cabbage kept fairly well, but the green outside leaves of the cauliflower and the green of the celery turned brown. The temperature was probably not kept low enough. Three or four degrees of frost will not hurt cauliflower. If celery can be kept satisfactorily it will mean much for our market gardeners, as Canadian celery is of better flavor and sells better than the celery that is imported."

When in Reading, England, recently, the staff representative of THE CANADIAN HORTICULTURIST had the pleasure of being conducted over the large seed warehouses and trial grounds of Messrs. Sutton & Sons, a name that is well and favorably known throughout the British Empire. THE HORTICULTURIST had a previous acquaintance with this firm through their catalogues. A personal visit to their place of business was considered a treat, and proved to be a surprise. No one, who has not been over their premises, has any conception of the pains this firm takes to ensure only pure seeds being sent to their customers. For their foreign trade, they take extra trouble to protect their seeds from moisture during the ocean voyage. The seeds are placed in ordinary packages bearing a Sutton seal. Afterwards, they are placed in a tinfoil covering with the ends melted together, then into an air-tight tin with a screw cap and this is soldered. If the order is sufficiently large these packages are placed in an hermetically sealed steel tank. These are but a few examples of the trouble taken to give customers pure seeds.

I have always valued THE CANADIAN HORTICULTURIST and look forward to its arrival each month.—Jas. Kay, Aberdeen, Scotland.

Handling and Shipping Fruit via Montreal

The Second of a Series of Articles by the Staff Representative of the Canadian Horticulturist, who this Summer Visited Great Britain in the Interests of Canadian Fruit Growers and of this Paper

THE conditions under which Canadian fruit is handled by the steamship companies while in transit are, on the whole, very satisfactory. It is gratifying to find that this is the case, as the proper transportation of fruit from the orchard in Canada to the salesrooms of Great Britain, is an important factor in the development of our export trade. On the manner of transportation largely rests the ultimate profit or loss of the venture. It should be such that the same care is taken as in the production of the fruit, but, until comparatively recent years the reverse has been in evidence.

Unloading on Wharf from Teams

One of the chief objects we had in view in visiting Great Britain was to ascertain the conditions under which perishable products are handled by the steamship companies. It was unfortunate that business arrangements necessitated the trip being taken at a season when fruit was not being exported. On the other hand large quantities of cheese and butter were being handled in the cold storage compartments of the vessel. The care given these articles gave us a good idea of the manner in which our fruit exports would be handled later in the season.

We all know, as has been shown repeatedly in THE CANADIAN HORTICULTURIST, that on this side of the Atlantic much of our fruit is not picked at the proper stage of maturity, that often it is left in piles in the orchard at the mercy of the weather, and that frequently it reaches the steamer in a condition unfit for safe carriage. The Markets Division of the Dominion Department of Agriculture, established by Prof. Jas. W. Robertson, and now ably managed by Mr. W. W. Moore, has done and is doing excellent work towards bringing about an improvement in everything connected with the shipping of fruit. Naturally, however, when we have not reached perfection in our methods on this side, we cannot say much if we find some points to criticize in the handling of our products by the steamship companies, and by those who are responsible for its care after it reaches the wharves in Great Britain.

In anything we may say on this subject, however, we are perfectly well aware that "one swallow does not make a summer," and that it would not be safe to draw any sweeping conclusions after accompanying and watching the handling of only one steamship load of produce. On the other hand we feel that what we saw during our trip was sufficient to give a general idea of the manner in which much of our fruit is handled, and to enable us to draw some conclusions therefrom. On the whole we were very favorably impressed with the manner in which the steamship company cared for its load and with the treatment accorded to the perishable products of which it consisted after it reached London. There is room, however, for great improvement in the care given our produce at other ports, such as Liverpool, Manchester and Glasgow.

An important factor in successful transportation is to keep the fruit at a uniform temperature from the time it is picked until it is sold. This has been demonstrated to the sorrow of some of our growers in western Ontario, in shipping fruit via New York. At that port the fruit is transferred from the freight sheds to the steamer on the decks of small boats. On these it is exposed to the sun and weather and then placed in the hold at a temperature often of 75 degrees. Having been picked and shipped at a temperature much lower, the rise and subsequent fall in temperature on board has a very damaging effect. Although a lower freight rate may have been secured, it seldom compensated for the loss occasioned in marketing by the inferior condition of the fruit; it did not net the shipper as much as had it been shipped by the all-Canadian route. Apples shipped via Montreal are delivered in the cars direct to the wharf, and can be unloaded, under cover of the steamship company's shed, immediately into the hold of the vessel. They thus experience but slight change in temperature and are spared all unnecessary handling. That as accurate an idea as possible might be obtained of the care given perishable products by the steamship companies, arrangements were made to sail on one of the large freight boats of the Thomson Line, of which the Robt. Reford Co., of Montreal, are the agents in Canada. It thus was possible to watch the loading of the vessel, to check the temperatures maintained in the hold during the voyage, and to observe the unloading and handling on the wharves in Great Britain. In this connection mention might be drawn to the careful supervision that is given to these matters by the officials of the Markets Division of the Department of Agriculture. Not only do they obtain the temperatures of much of the produce before it is loaded on the vessels and note the condition of the packages and produce, but this year they are placing thermographs in the holds of every steamer leaving Montreal for Great Britain. These thermographs keep an accurate, automatic record of the temperatures maintained each day of the voyage. In Great Britain, inspectors of the department again inspect the cargoes as they are unloaded, test the temperature of the produce and record the percentage of broken boxes and damaged fruit. This work has had a far-reaching effect, as shown by the great improvements that have been made in recent years in the methods of handling and shipping perishable products.

Lowering Apples into Hold

THE THOMSON LINE

Not being an expert in cold storage matters, some points may have escaped our attention that an expert would have caught, but we feel free to say that we were most favorably impressed by the careful manner in which the officials of the Thomson Line handled and looked after the cargo of the vessel on which we sailed. This care was given, not only to the products while being loaded, but during the course of the voyage and throughout the process of unloading on the other side. This line, in fact, appears to have brought these matters very near to the point of perfection.

From information gained, not only from officials of the company, but from exporters in Canada and importers in Great Britain, the Thomson Steamship Co. are said to have been the pioneers in every forward movement made to enable the Canadian shippers to land their produce in Great Britain in satisfactory condition. They are said to carry more fruit from Canada than any other company, and have the name of being the most careful, the quickest and most obliging company in the Canadian trade to London. The company has the exclusive right to discharge the cargoes of its vessels into the new Canadian Produce Warehouses (West) at Surrey Commercial docks. These warehouses are the best equipped in Great Britain.

The accompanying illustrations, secured last year, give a good idea of the manner in which the fruit is unloaded from the drays to the wharf, and the barrels lowered into the hold. It will be seen that large mattresses are used on which to land the barrels, so that the fruit will not be bruised or injured in any way when loading or unloading.

The vessel is divided into compartments in

Apple Storage Room Aboard Ship

which temperatures of various degrees can be maintained. The compartments are provided with ventilating shafts. Sirocco fans are used to draw off any foul air or gas that may accumulate. During the hot weather these chambers are cooled by means of cold air. The temperature can be kept at about 40 degs. Some chambers are insulated and cooled by the brine pipe system, and can be cooled to zero if necessary.

Shippers should do everything possible to see that the fruit reaches the ship in proper condition. Poorly selected and poorly packed fruit cannot be expected to reach London in satisfactory condition. The quality of such and the prices obtained are not as good as is the case where proper care is taken to deliver it to the boat in good condition and at a right temperature.

ON THE OCEAN

During the voyage the refrigerating machinery was placed in charge of the 4th engineer, who took the temperatures 6 times each day. This was done by means of a thermometer, on a string, placed at the bottom of an iron tube leading to the various chambers. These tubes had an opening on the deck through which the thermometers were drawn up that the readings might be recorded. We were given the privilege of verifying these records, and took advantage of it many times during the voyage.

Great care was taken to ensure an even temperature in the hold. This usually is accomplished, as the records on the thermographs that are placed in each compartment by the Dominion Government inspectors in Montreal show. Conditions on the wharves at London and other British ports will be described in our next issue.

Our Apple Trade in France

A. McNeill Fruit Division, Ottawa

The fruit division is in receipt of a letter from Mr. Proust, of Roscoff, France, who has done considerable business in Canadian apples delivered in Havre. Mr. Proust says that at the time of writing, the latter part of June, the prospects for a crop in France were fair, but that they could not speak positively of the actual quantity until about the end of July. Whether the crop in France is good or not, he says there will always be a trade for a large quantity of Canadian Roxbury Russets. These apples should not be too large. Mr. Proust gives the size of 22 centimeters in circumference, or about 8¾ in., carefully packed in bbls. These apples should be delivered at Havre about the end of Oct. or middle of Nov., in sufficient quantities to impress the market.

Mr. Proust states that should there be a shortage in the French crop, there will be a large market not only for Roxbury Russets, but for Golden Russets, Ben Davis, Stark and apples of that type. This corresponds with the experience of the last two or three years in the French trade. Our Canadian buyers were somewhat astonished last year to find that the French buyers in Canada refused Northern Spies, but would take all the well-grown Ben Davis that were available.

Independent Telephones

An independent telephone movement centering at Jordan Station has taken place recently. A large number of growers in Beamsville, Vineland, and Jordan have formed a co-operative company to be called the Niagara District Independent Telephone Co., Ltd., with a capital of $10,000. The shares are $25 each; any man taking three shares gets his phone rental for $10; less than three shares, including non-subscribers, $12. The stock is limited to six shares and no subscriber can transfer his stock without the consent of the company. Already 100 phones are contracted for, and over $6,000 in stock subscribed. The provisional directors are: Pres., C. Wismer, Jordan; sec.-treas., Levi Moyer, Beamsville; Alvin Culp, Alex. Tromp, and Elvin Werner.

POULTRY DEPT.

Conducted by S. Short, Ottawa

The growing demand for first-class eggs and poultry is awakening a keener interest in poultry production both among experienced breeders and also among intelligent young men and women who are attracted to poultry raising as a means of livelihood. Better prices are prevailing now than ever before. Year after year sees an upward tendency in the prices of eggs, both in summer and winter. It must be borne in mind, however, that this is caused partly by the increase in the prices of all poultry foods and lumber for building, and in hired help. I may fairly say that the prices are not yet so high as to give more than only a fair profit to those who exercise care and economy in their business.

The magnitude of the poultry interests and its value to the country is being fully recognized by the Ont. Government, which gives generous grants to the leading poultry assns., as well as maintaining a dept. for poultry at the Guelph Agri. College. An evidence of the good work done there is the bringing together of all the leading experts in poultry matters, both American and Canadian, at the first poultry institute held at Guelph in March last.

DRY FEEDING

At that meeting many valuable lectures were given, all of which have been incorporated in a report published by the Dept. of Agri., Toronto, and which can be had by making application through the mail. One of the most interesting of these lectures was delivered by Mr. A. F. Hunter, West Roxbury, Mass., on "Dry Feeding." It contains practical and common sense suggestions and changes of a radical nature in feeding with a view to the improvement of the birds and a saving of time. Pressure of space forbids the publication in these columns of the entire lecture. The following extracts, however, will give an idea of Mr. Hunter's views:

"That quite a good deal of the trouble we have been having with our flocks was due to the defects in methods of feeding, has come to be the opinion of many observers, and of late the feeling has been gaining ground that the feeding of a cooked mash is a serious mistake. One reason for this is found in the fact that the fowls gobble the food down too quickly, far too quickly for the digestive organs to perform their allotted tasks, and the results have appeared in the form of indigestion, looseness of the bowels and other symptoms of the birds being out of condition. Not infrequently the birds become over-fat, the organs become engorged, a blood vessel bursts, and a fowl is found dead under the roost in the morning. The explanation of this is that feeding a cooked mash is 'forcing' the birds beyond their ability to digest and assimilate; it is analogous to 'forcing' for rapid growth of tender, delicate flesh for market, and the process is all right for chickens that are to be early killed for the table; for that definite purpose the quicker the growth, the greater the profit, but for birds that are to endure the strain of persistent egg-production, and are to be the parents of strong, vigorous, bound-to-live offspring, the 'forcing' process invites disaster, because it induces and continues a condition of tenderness that is exactly opposite from the hardiness so desirable for the best results.

"The pith of the argument for dry feeding lies in eating slowly a bit at a time—first a mouthful of dry mash, then a bit of grain or a seed or two, and then a snip at a clover-leaf or head—then to the drinking fountain for a sip of water. It does not take us long to discover that this is exactly the way the fowl or chick eats when running wild and finding its food bit by bit—it is 'Nature's way' for a bird to feed, and if we but do our part in supplying the essential food elements so the birds can take what they want and as they want it, the conditions seem to be right for them to eat in the natural way, and they will eat no more than they want, and eat it in the way their systems can best appreciate it."

Empress Eugene is the hardiest of the Duke cherries—the only one that has fruited at Ottawa. —W. T. Macoun, Horticulturist, C.E.F.

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In spite of this great reduction it is our intention to make the paper better in every way than ever. To inaugurate our subscription campaign we have decided to make a still greater, but only a limited term subscription offer.

During the month of September we will accept Clubs of Four New Full Year Subscriptions for The Canadian Horticulturist for only $1, or at the rate of 25c. each.

We hope our readers will help us, not only by renewing their own subscriptions at our greatly reduced rates, but that they will get up clubs for THE HORTICULTURIST among their friends and neighbors, and thus help us to make this **the Greatest Horticultural Paper in the World.**

We are wondering who among our readers will be first to send us some of these clubs. Our object in making this great offer is explained in the editorial columns of this issue.

These club rates apply only to bona fide new subscriptions and do not refer to subscriptions that were ordered or that expired on or before August 31, 1906. Such subscribers will be able to renew their subscriptions next year at the reduced rate.

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TORONTO ———— ONTARIO

British Columbia Letter

C. P. Metcalfe, Hammond

Weather conditions for July and Aug. have been favorable. Raspberries and blackberries are an average crop. Prices good. Plums generally are a heavy crop, Italian prunes especially. Early apples are about over, and the prospects for a heavy crop of fall and winter apples are good. Pears are somewhat less than a medium crop.

Manufacturers and small fruit growers have been getting rid of their surplus stock of small fruit boxes, and will be in a position to use the legal ⅔ and ⅛ qt. bxs. next year. I think most likely the ⅛ qt. box will be used for strawberries and the ⅔ qt. for raspberries. Plums and prunes are in now, and will be moved out in carload lots next week and after until finished.

The Provincial Government here has been making exhibitions of green and bottled fruits at various points in Manitoba and the Northwest. The exhibitions were very creditable and were the admiration of thousands who attended the exhibitions and will prove an excellent advertisement for the fruit-growing industry of the province.

The problem confronting the horticulturist at the present time is the lack of cheap labor. All countries engaged extensively in the production of many of the staple articles of consumption and trade, have their cheap or coolie labor, and it will be necessary for the Dominion Government to take some action in this respect to relieve the present want. The development of the fruit industry of B.C. is being retarded by the want of cheap labor. The problem must be dealt with sooner or later by the Government.

Four new subscriptions for The Canadian Horticulturist for only $1.00. Can't you get up a club?

A Growing Exhibition

The Ontario Horticultural Exhibition, that will be held here from Nov. 6 to 10, will be conducted on a much larger scale than last year. One of the chief features this year will be the presence at every gathering of the famous Black Dike Band of Great Britain, one of the most famous musical organizations in the world. The instruments are all of brass and, in this respect, the organization is unique. At every performance at afternoon and evening there will be selections by the band, as well as quartettes, duets and solos.

The requests for prize-lists already received indicates that the exhibition, in all lines, will be much ahead of last year. The excellent quality of this year's fruit crop insures an exceptionally high-class exhibition. It is believed that the combination of high-class flowers, fruit and vegetables, with the best of music, will be sure to attract a very large attendance. It is expected that Massey Hall will be crowded every day. This year the Toronto City Council has appointed representatives to act upon the Board of Management, which insures the interest of the city.

A strong committee, composed of Mayor Coatsworth, representing the city; R. J. Seore, H. R. Frankland, representing the Horticultural Exhibition; F. F. Reeves, representing the Veg. Grs. Assn.; H. G. Sibbald, representing the Bee Grs. Assn.; and H. B. Cowan, representing the Dept. of Agric., waited on the Canadian Passenger Assn. early in Aug., and requested half-rates to the exhibition. The decision of the railways has not been announced, but it is anticipated that they will run an excursion from all parts of the province on Wed., Nov. 7, good for the entire week. Those desiring to attend at other dates will be able to return free on the certificate plan.

A Nice Premium will be given Free to all Readers who Buy Goods from Advertisers.

Fruit Crop Conditions and Prices

APPLE indications in Canada are for only a medium crop, but on the whole, of good quality. From now on weather conditions will be the controlling factor. In Ontario, the crop will not be as large as was expected; reports from a few districts, where hail and dry weather have done damage, indicate a light crop. As a whole, only about 50% of a full crop may be expected. The quality promises to be extra good, scab and insect injury being less noticeable than for many years. Rain is needed badly; if it does not come soon, the fruit will be undersized. Among the fall apples, Colvert and Fameuse promise to yield the heaviest. In winter varieties Spy and Greening are the most promising, the Spies being particularly good and clean. Baldwin and Russet will come next, with King and B. Davis following.

Pears promise a good average crop of fine quality. The peach crop is declared to be a fair average, but slightly less than last year. Plums, a very light crop; prices will be high. The grape crop is excellent this year. Rot is prevalent in a few vineyards, especially in those that were not sprayed. Fruit of all kinds is suffering for want of rain.

A POINTER ON PRICES

There will be no difficulty about selling apples this year. We have a number of buyers in mind who will have the effect, even if they do not buy the whole crop, of materially stiffening prices. Two buyers from South Africa are now in Canada negotiating with Annapolis Valley and Ontario growers, and making preparations to ship Gravensteins and other apples to Cape Town. They will probably buy largely. One of them called on THE HORTICULTURIST recently, and said that he wanted apples that could be relied on, and is willing to pay an extra price for them. In addition to these a number of buyers have written from the Old Country, and expressed their intention of coming to Canada to buy. As regards sales already made, we know of some that indicate that prices will be good. One orchard of about 200 bbls., east of Toronto, was sold for $300; one of 250 bbls., $275; another at $2.25 a bbl., tree run, owner to furnish bbls. and pick, grade and pack with assistance of buyer. It would be well for growers not to be in a hurry to sell winter apples, but be sure that they put up a good article, then ask a good price.

UNITED STATES REPORT

While not so large as the govt. report from Washington would indicate, the apple crop of the U.S. is known to be much larger than last year. The Apple Congress that met in St. Louis on Aug. 17 estimated the crop of the U.S. and Canada at 56,000,000 bbls., and the price to be $1. In N.Y. State there will be a large crop of good quality; Baldwins predominate, with Kings next; Russets are short. That state will be a strong competitive factor, for Canada, in the export trade. Missouri will have a fine crop of excellent quality. The U.S. govt. reports Mo. to have 82% of a crop, but probably 60% or less is nearer correct, or about 200% of last year's crop. Ben Davis is the leading variety, and particularly good this year. The crop in Ohio is the best for years. Mich. will have about 55% of a crop. Illinois will be less than the average; Iowa, Kan., Ark., and Neb., good. Illinois will have less than was reported, probably average. Other states, except Va., also will have fair crops. The box apple states, Colo., Wash., Idaho, Ore., and Cal., are estimated to have double the crop of last year. That means that they will cut a big figure in the export trade.

THE NOVA SCOTIA CROP

Nova Scotia will have an average crop, about the same as last year, say 325,000 for export. The quality is only fair. It is reported that a large part of the crop is not worth shipping. Fungus has been prevalent and insects. Tussock moth suddenly became troublesome, and is destroying not only the leaves but also gnawing the surface of the apples and making them valueless. Baldwin will lead in yield; quality, good. King, Ribston, Blenheim, Spy and Russet follow in order. Gravenstein and B. Davis, poor crop and poor quality. British Columbia will have a good average crop. In Quebec, the crop will be less than medium; Fameuse, fair. The Ontario crop correspondents of THE HORTICULTURIST point out the situation in the various counties of the province as follows:

PRINCE EDWARD COUNTY

West Lake.—The apple crop will be less than last year by thousands of bbls.—Stephen Lake.

NORTHUMBERLAND COUNTY

Rednersville.—The apple crop is only 60% of last year's crop. The quality runs from fair to good.—Harry Dempsey.

DURHAM COUNTY

Bethany.—Fall and winter apples will be a medium crop, only two-thirds of last year's crop. Pears and plums will be light. Fungus diseases are not prevalent.—F. E. Brereton.

PEEL COUNTY

Clarkson—Lawton berries are a full crop, and paying well. Winter apples are falling short of last year's crop; they are clean and free from scab or spot. Pears are a good crop.—W. G. Horne.

HALTON COUNTY

Burlington.—The quality of apples is better than average. Codling moth is working havoc among pears and apples. Very little black spot is to be seen, but considerable damage has been done in many orchards by hail. Greening, Spy and Cranberry are making the best show at present. King, Baldwin, Russet and other winter apples are a lighter crop. Fall apples are a light crop. There will be about the same quantity of export apples from Burlington this year as last year. Pears are a good average crop. Keiffer a little under average.—Wm. F. W. Fisher.

WENTWORTH COUNTY

Hamilton.—Early peaches are receiving attention now, mostly Clingstone. Prices have kept up fairly well. Yellow St. Johns are next to arrive, and will be ready about Aug. 30. Crawfords are not expected to be a heavy crop this year. While plums have been pronounced a complete failure, a number of baskets have appeared on the market, Bradshaw, Queen, Saunders, and Imperial Gage. Prices, 40-75c. a 11 qt. bskt. Pears are an abundant crop. Bartletts will be ready about Aug. 27. Clapp's Favorite are ready now, and are worth 30c. a bskt. wholesale, and 40c. retail. Grapes will be a heavy crop. Muskmelons are a good crop and bringing good prices, in 11 qt. bskts, 25-40c; in crates, $1-$1.25. Watermelons have just come in and are worth $1-$1.25 a doz. Harvest apples are plentiful. Winter apples good only in some varieties. Baldwins are scarce.—Jas. A. Stevens.

Winona.—Early Clingstone peaches are an abundant crop, quality not up to the usual, owing to the extreme dry weather, with prices ruling rather low, but demand good. Lawton berries, a full crop and fairly good sample, are nearly over now; prices and demand good. The general outlook for late peaches is fair; if we have rains shortly it will greatly assist the quality and quantity, otherwise I do not think they will come up to the standard sizes of the last few years. Plums are a very light crop, but those that are bearing (where sprayed) are quite free from rot and fungous diseases; the bulk of the crop will be of the following kinds: Bradshaw, Yellow Egg, Gueii, Monarch, Reine Claude, Lombard and some kinds of Gages. Grapes, where sprayed, are looking up to last year's quality and quantity; where not, more or less rot and petrified berries appear in the bunches or have fallen out and left scraggy bunches. I sprayed all kinds of grapes before blossoming, with the exception of one row of Niagaras; where sprayed, about perfect; the one row not sprayed before blossoming, very poor. Although sprayed twice since, the spray has had no effect in checking the rot, which is gradually getting worse until at present the bad berries in bunches will run from 30% to 90%.—Egbert M. Smith.

LINCOLN COUNTY

Grimsby.—The general outlook for fruit is good. Rot in grapes has not developed much in last 3 or 4 weeks; Rogers 15 is affected most. Peaches are a fair crop; Elbertas, good; Crawfords, rather shy. Pears are good and exceptionally clean, especially Bartletts; blight has been prevalent, and this year affected orchards planted on clay more than those planted in light soils. Plums are very light. Tomatoes, while not badly damaged, show signs of suffering from lack of rain. The apple prospect would appear to be as good as last year, but all the trees have suffered more or less from twig blight, especially the Greenings.—H. L. Roberts.

Jordan Station.—The fruit crop is in a trying condition owing to the need of rain, although in this immediate locality it is not suffering to the same extent that it is to the east and west of us. Neglected peach trees are carrying 3 or 4 times the number of peaches they should carry; it is impossible for them to bring to perfection their load. Trees that have been well pruned, cultivated, fed and thinned, are carrying a good crop of fine fruit. Grapes, where spraying was neglected, are rotting badly; in some cases almost ruining the crop; on the whole, no more than half a crop. Apples, even where not sprayed, promise a crop much larger than last season and of better quality. Pears have suffered from blight; the crop will be light, though of good quality. Plums are more plentiful than was expected, and are of good quality.—C. M. Honsberger.

St. Catharines.—The extreme drought that has prevailed throughout the greater part of the Niagara district has wrought considerable damage to the fruit crop and, unless broken in the near future, will be quite serious. The early tomato crop has proved a very good one, but serious damage from rot is reported in nearly all the late fields, which, of course, are depended upon for the main crop. Canners are becoming apprehensive that the pack will be very much lessened. Pears are a moderate crop, generally speaking; many varieties, however, have blighted to a considerable extent. Early peaches have been plentiful. The yellow varieties will be a fairly good crop, but need rain badly to swell them to normal size. Grapes have been affected slightly by rot and mildew; the crop will be moderate to fair. All fruits are ripening prematurely on account of the dry, hot weather.—W. H. Bunting.

KENT COUNTY

Chatham.—Fruit prospects are good. Apples are quite free from scab and worms, and are holding on pretty well. This is for orchards that have been sprayed. In unsprayed orchards the crop is light. Greenings promise most, Spy next, Baldwins light; Ben Davis, light; only few Kings.—W. D. A. Ross.

LAMBTON COUNTY

Forest.—The peach and plum crop is practically a failure. Pears will be fair and crab

apples heavy, although neither is grown extensively. The apple crop will be about 25% heavier than last year, and where the orchards have been sprayed and cared for, the quality fine; as a whole, the crop is light.—D. Johnson.

BRUCE COUNTY

Walkerton.—Plums are a total failure. The apple crop is light to medium; quality good, very little spot, some codling moth. Owing to dry, hot weather, apples on sod are drying badly. Cultivated orchards are holding their own. If present weather continues, the crop will be lessened materially.—A. E. Sherrington.

GREY COUNTY

Meaford.—Apples are cleaner than for many years, though, where unsprayed, they show some spot. The crop is very irregular; some orchards are as full as in '96, while others have a very light crop. This feature is more noticeable in winter varieties, fall fruit being generally good. There is a full crop of snow apples, also of Ben Davis. Spies and Greenings are medium, Baldwins light; other varieties are only fair. Pears are a light crop. Plums, a failure. Peaches, good.—A. Gifford.

NEW BRUNSWICK

York Co.—Duchess apples are extra good; Wealthy, good; Alexander, medium; Fameuse good, slightly affected with scab; Y. Transparent, good; Gano, medium; G. Russet, failure; McIntosh, failure; Astrachan, failure; Pewaukee, very light; Princess Louise, light. Crab apples, Hyslop, extra good. Plums, failure. Blackberries, good. Black Currants, extra good.—John Ferguson, Lower Queensbury.

St. John.—There are not many apples raised in this province as yet. Many young trees are planted that have not yet matured. The average pack here is from 3,000 to 5,000 bbls. The pack this year will be about 5,000 bbls., as crop prospects are very favorable.—Taylor & White.

QUEBEC.

Abbotsford.—Unfavorable conditions have reduced the prospects for an average crop of first-class apples. The "June drop" was heavy. The curculio and codling moth are in evidence. The Fameuse is a fair crop, but more scabbed than last season. Winter varieties not over half crop. A few pears, but plums and cherries are a complete failure.—J. M. Fisk.

BRITISH COLUMBIA

Plums, Japanese, light; European, full crop; Washington, Bradshaw, Gage, and Y. Egg, especially good. Peaches, not grown extensively, but where planted, are a fairly good crop; Y. St. John and Triumph best, loaded. Pears, Clapp's, rather light; Bartlett and F. Beauty, good; L. Bonne and Clairgeau, well loaded. Apple trees in full bearing, well loaded; younger orchards, only a scattering crop.—Martin Burrell, Grand Forks.

Four people can get The Horticulturist for a full year for 25 cents each——provided they are not already subscribers.

Over $1,000 in Prizes

So liberal have been the donations of special prizes to the Niagara District Horticultural Exhibition that will be held at St. Catharines, Sept. 14, 15, that the prize list now amounts to considerably over $1,000. Of this, about $600 will be given for fruit, $330 for flowers and $150 for vegetables. Copies of the prize list may be obtained from the sec., Mr. E. T. Reed, St. Catharines.

The judges were appointed at a special meeting held Aug. 23, and are: In the fruit sections, for commercial packages and special prizes, A. McNeill, of Ottawa, and P. J. Carey, of Toronto; M. Pettit, of Winona, for grapes and pears; A. W. Peart, of Burlington, for apples and plums; and E. Morris, of Fonthill, for peaches. Mr. Braik, supt. of parks in Buffalo, assisted by another gentleman from Buffalo, will judge the flowers, and Mr. A. McMeans, of the Agric. Coll., Guelph, the vegetables.

Arrangements are being made for the running of a special train from Toronto to St. Catharines the last day of the Exhibition with excursion rates from all points along the line. The exhibits promised already show that the large armory will be severely taxed to afford sufficient accommodation. A special exhibit is being prepared by Mr. Roderick Cameron, of Niagara Falls, that will include over 1,000 specimens of flowers. It promises to prove a great exhibition and a valuable advertisement for the Niagara district.

Large Profits From Fruit

This statement shows the value of the crops grown by Mr. Arthur C. Starr, of Nova Scotia for the last 7 years. The profits were estimated as being equal to 15% on a value of $1,000 an acre. The statement was as follows:

Year	Bbls. Exp'd.	Total Bbls.	Total Export Recpts.	Total Receipts
1899.....	1,447	1,715	$ 3,655.00	$ 3,968.50
1900.....	717	995	1,231.06	1,403.39
1901.....	1,759	2,000	5,018.56	5,330.33
1902.....	1,067	1,220	2,446.57	2,581.74
1903.....	1,838	2,037	4,298.04	4,558.23
1904.....	1,609	1,715	2,446.75	2,537.00
1905.....	715	840	1,978.61	2,121.90
Total.....	9,152	10,532	$21,075.59	$22,491.09
Average...	1,307	1,508	3,010.80	3,213.00

Average of export fruit, $2.30 per bbl.
Average total sales, $2.13 per bbl.

This crop was raised from 14 acres of bearing trees.

EXPENSES

Plowing and harrowing	$ 42.00
Fertilizers	224.00
Spraying	56.00
Pruning	14.00
Picking and packing	360.00
Barrels	403.00
Contingencies	14.00
	$1,113.00
Total average sales	$3,213.00
Total expense	1,113.00
Net profit	$2,100.00

This is equal to 15% on a value of $14,000 or of $1,000 per acre.

Vegetables for Pickling.—The manager of a prominent pickling concern in the vicinity of Toronto said: "For the pickling business, we require vegetables that are fresh and of good quality. Cucumbers should not be ripe when picked; they should be small rather than large, and they should be carried to the factory as soon as picked, so that they will not lose their crispness. Onions must be small, three-quarters of an inch in diameter and under, as they appear to better advantage when put up. Cauliflower for pickling should be compactly headed, clean and white, free from leaves and dirt; the fresher the better, and if of medium size they are nicer to handle than either small or large."

A great offer: The Canadian Horticulturist 1 year for 50 cents, or 3 yrs. for $1.20. Four new subscriptions, 1 yr. for $1.00.

THE CANADIAN HORTICULTURIST has improved greatly during the past year.—Douglas Ford, Toronto, Ont.

Analyses of New Experiment Station Soils

The Rittenhouse Farm

No.	Where Taken and Area.	Per cent of Gravel.	Per cent of Sand.	Per cent of Silt and Clay.	Organic Matter.	Class.
1	Near school gardens; about 2½ acres	.59	56.276	43.674	3.736	Loam.
2	Subsoil, 2 ft. deep	0	67.325	32.675	....	Sandy loam.
3	Fifty yards north of gardens	1.64	54.652	45.348	4.988	Loam.
4	Subsoil, 15 in. deep	1.07	25.642	74.358	....	Clay.
5	In the ravine; 4 acres	0	41.934	58.066	4.812	Loam.
6	Subsoil, 15 in. deep	.630	39.632	60.368	....	Clay loam.
7	Centre field, 27 acres, representing 60% of farm.	10.830	32.488	67.512	9.260	Clay loam.
8	Subsoil, 15 in. deep	6.940	14.606	85.394	....	Clay.
9	North-west side of ravine; about 6½ acres	.950	46.446	53.554	6.112	Loam.
10	Subsoil, 1 ft. deep	3.650	33.974	66.026	....	Clay loam
11	Red clay area, in centre field; 4½ acres	10.790	20.318	79.682	8.330	Clay loam.
12	Subsoil, 15 in. deep	1.710	10.288	89.712	....	Heavy clay.

There is also 1½ acres of wood land.

The Harris Farm

13	Centre of farm; 30 acres	3.390	43.190	56.810	7.916	Loam.
14	Subsoil, 8 in. deep	8.430	36.855	63.195	....	Clay loam.
15	Near lake shore; 10 acres	1.790	41.192	58.808	6.276	Loam.
16	Subsoil, 15 in. deep	.430	35.400	64.600	....	Clay loam.

There is also about 4 acres of red clay, similar to Nos. 11 and 12.

The Culp Farm

17	In peach orchard; about 15 acres	1.200	56.984	43.016	4.966	Loam.
18	Subsoil, 3 ft. deep	.370	76.494	23.506	....	Light sandy loam.
19	A fair average of farm; about 58 acres	1.840	64.582	35.418	3.850	Sandy loam.
20	Subsoil, 15 in. deep	1.110	60.088	39.912	....	Sandy loam.

There is also ½ acre of red clay, similar to Nos. 11 and 12; 5 acres of low land, similar to Nos. 5 and 6; and 10 acres of wood land.

Vegetable Crops Have Suffered from Drought

THE drought in Ontario during the past 6 or 7 weeks has left its mark on the vegetable crops. Reports from the crop correspondents of the Ont. Veg. Assn. indicate that dry rot and drought have caused a partial failure of the tomato crop, particularly in the Niagara district. As an indication of how seriously the canning factories view the situation, the canners, who usually do not commence to pack tomatoes until the late varieties come in, began to buy and pack all they could get of the early varieties. Potatoes, likewise, were threatened and, due to scarcity, are bringing good prices. Other vegetables also have felt the need of moisture. Showers that fell the latter part of Aug., however, improved the situation considerably. Cauliflower and cabbage are under the average, but may improve, if it rains frequently. Onions will be about ½ a crop of good quality. Root crops are holding their own. Celery, good. Sweet corn, small in ear. The detailed reports are as follows:

OTTAWA DISTRICT

Owing to drought and hot weather, crops are in a peculiar condition. Tomatoes have ripened too quickly, and consequently a glut is on. Corn is not well filled out, but there is lots of it. Carrots, beets, parsnips and onions are still coming in fast and of good quality. Lettuce is in good demand and no supply. Plenty of cabbage, but small, hard and tough. Cauliflower, very scarce. Late cabbage and cauly are expected to be a short crop unless it rains soon. Early potatoes are stiffening in price; the late crop is almost a failure, being very small. I have seen or examined quite a number of onion patches, and while they are maturing a little early and small, the crop will be the best that I have seen in years.—T. Mockett.

FRONTENAC COUNTY

Kingston.—Continued dry weather and heat keeps the late varieties of vegetables stationary. No growth is noticeable. Late sown cauliflowers will be a light crop; some show signs of heading, but are of no use. Cabbages will yet head if rain comes soon. Onions are ripe, but are small owing to the check given by blight. The rot in potatoes seems to have been arrested; early maturing kinds may prove a fair crop. Tomatoes are suffering from the extreme heat. One-third of the crop is reported as useless. They are coloring too early, and will not keep long.—Chas. F. Adair, Cataraqui.

LENNOX AND ADDINGTON

Napanee.—Tomato crop is not as large as was expected; the fruit is not ripening as it should, but there will be a fair crop. Potatoes are rotting badly. Onions are a poor crop, owing to blight. Cabbage is practically a failure, owing to maggot in early spring. Cauliflower, beets, radish and other garden truck will compare favorably with other years.—E. M. Sherman.

PRINCE EDWARD COUNTY

West Lake.—Tomatoes are short of what was expected. Potatoes are a good crop. Corn not as good as expected.—Stephen Lake.

TORONTO DISTRICT

Humber Bay.—Hot, dry weather has hurt the tomato and cucumber crop, which will be light. These crops are too far gone for rain to do much good. Onions will be of first-class quality, but small in size. Root crops are holding their own. Late cabbage is suffering for want of rain. Early cauliflower are poor. On account of the high breeding of the stock sent out by seedsmen, the foliage is small, scarcely enough to cover the heads. The outlook for late cauliflower is not very bright. Late corn is doing well. Celery is an abundant crop, of good quality, and free from blight. Squash is a good large crop. Early potatoes are almost all dug. Late potatoes are a light crop, and scarce on the market. Prices have gone up to 80c. a bu., and will reach $1 by end of the month. Prices for vegetables vary every few days; the following are for Aug. 22: Lettuce, 15c.-20c. a doz.; cucumbers, 25c.-40c a bu.; tomatoes, 40c.-50c. a bu.; beans, 75c. a bu.; onions, choice white pickling, $2.25 a bu.; Yellow Danvers, 75c. a bu.; beets, 30c.-40c. a bu.; carrots, 50c. a bu., or 10c. a doz. bnchs.; corn, 5c.-8c. a doz.; celery, 25c.-50c. a doz., cabbage, large size, $2.00 a hundred.—J. W. Rush.

Doncaster.—Crops promise to be good. Although onions have blighted considerably, they will be a fair crop. Celery is suffering from blight. Cauliflower, cabbage, carrots, beets, parsnips and cucumbers are doing well. Tomatoes are a good crop, but are showing some rot. Late cauliflower promises to be extra good.—C. Gibbard.

Bracondale.—Crops in general are looking exceedingly well. Early tomatoes are about all over owing to the need of rain; late varieties, such as the pinks and larger kinds, are looking and picking much better than at first expected. Seed onions will be an average crop. Prize-takers, badly blighted, with the sample small. Late cabbage and cauliflower are in fine shape, but need rain to mature nicely. Celery is slightly blighted, but probably will pull through. Prices are good for the summer season.—A. W. Shuter.

PEEL COUNTY

Clarkson.—The early potato crop is good, and prices also good; late potatoes not so good. Sweet corn, a big crop with prices low. Onions on light soil have suffered from drought; on heavier land, looking well.—W. G. Horne.

HALTON COUNTY

Burlington.—Late tomatoes have suffered from drought; the rain of August 20 has helped it somewhat. Early tomatoes were not as heavy in yield as last season but prices were good. Onions will not be more than ⅔ of the crop they were last season, due to hot and dry weather. Transplanted onions are doing better than seed patches. Late potatoes do not promise more than ½ a crop. Celery, about the same as last year—with prices better. Peppers are an average crop, with prices none too good—too large an acreage. Egg plants are a fair crop and paying about the same as last season. Late cauliflower and cabbage promise a good crop, if weather from now on is favorable.—J. A. Lindley.

HAMILTON DISTRICT

Hot and dry weather has threatened the tomato crop, but the heavy rains of Aug. 20 helped it considerably. However, the yield will not be as large as last year. Dry rot is ruining a large part of the crop and, besides, the blossoms and small fruit do not appear to be as prolific as in other years. Potatoes, selling at 90c. per bu., would lead one to believe the crop is a failure; while it may be light in other sections, the yield here appears to be fair. Onions are only a fair crop. Celery is fair. Early cauliflower is a poor crop. Late cauliflower and cabbage will improve after the recent rains.—Jas. A. Stevens.

LINCOLN COUNTY

St. Catharines.—No rain has fallen during the past month, only a few light showers, barely sufficient to lay the dust. Everything is suffering severely. If drought continues the result will be serious in many respects, although, indirectly, good may result. One of the benefits will be in raising the price of tomatoes. Last season tomatoes were a good crop and growers who do not look ahead, or who do not indulge in the pastime of using their brains as much as their hands, were falling over each other in signing contracts for growing tomatoes at 25 cts. a bu. for the season; as a result, all the growers had to accept 25 cts. The shortage this season will force prices up. The contract price for 1907 should be 30 cts. No grower should sign a contract for less before March 1, 1907.

Melons are ripening, but small in size. Onions are drying up and will only be a half crop, but should cure well. Potatoes, early, are a fair crop; medium, will be of good quality, but under average; while late look like a failure. Carrots, fair. Sweet corn will be very small and short in the ear. Tomatoes have been affected more or less with the black rot; blight is now showing; unless rain follows soon, the size of tomatoes will be small and the crop about one-half of average. The exception to this is that all crops on well-cultivated fields show a fairly good yield and impresses the lesson of the necessity for getting the land in good shape early in the season and following it up with thorough cultivation. Fruit looks fairly well, with a tendency to some small specimens; grapes look remarkably well.—Robt. Thompson.

WELLAND COUNTY

Niagara Falls South.—Garden crops need rain; have had only a few light showers since July 3. Beans are entirely dried out. Cabbage and cauliflower are making slow growth. Celery is suffering much from want of rain. Onions, almost matured, undersized, about half a crop. Lettuce and other salads almost ruined by the intense heat. Corn also shows signs of the drought; early corn, good; late, poor to medium. Cucumbers, fair. Melons, peppers, egg plant, squash, extra good. Early tomatoes, big crop, badly sun scalded, but eagerly bought by canners. Late tomatoes, except on moist, low-lying soil, are suffering badly from dry rot; in fact, some patches will be entire failures. The prospects for a good crop of late tomatoes have decreased 50% since last report. Second early potatoes, ⅓ crop; late, without rain soon, will be no better. Roots are fair.—Thos. Stokes.

BRANT COUNTY

Scotland.—The onion crop is discouraging, owing to continued hot and dry weather; the crop is ripening fast and the onions have not fully developed. The estimated acreage of onions is 130 acres. Due to dry weather, also, the tomato crop is almost a failure. The potato crop is likewise threatened, and there is also danger to fruit. The rain of Aug. 20 may improve matters.—E. G. Malcolm.

KENT COUNTY

Chatham.—All kinds of vegetables are plentiful. June-planted potatoes are suffering from the drought and the yield will be materially lessened; early potatoes have been fairly plentiful and the prospects are for high prices. Onions are a fair crop, but as the acreage is smaller than usual, there will not be many for export. Sweet corn is very abundant. Cucumbers are yielding well on the sandy soils, but on clay they are commencing to dry up. Muskmelons promise to be a large crop, both in numbers and size. In some sections, grasshoppers are damaging the crops, especially tomatoes, which are very plentiful; the later crop may not be so plentiful. Celery crop looks well and of a fair sample; rain is needed for blanching.—Fred Collins.

LAMBTON COUNTY

Sarnia.—Late potatoes not a good crop on account of the blight; second early were a disappointment, small and only half a crop. Late cabbage are doing well, but not as large an acreage as usual. Second early, plentiful and cheap. Onions, that were left by the maggot, have done well; the acreage is under the average. Tomatoes, just beginning to come in freely; about an average crop. Sweet corn, good crop. Turnips, good, but not grown extensively. Other vegetables usual quantity and in fair condition.—W. A. Broughton.

The New Experiment Station

The paramount topic of conversation among fruit growers in the Niagara peninsula, is the new experiment station. I have heard a medley of opinions on the fitness of the location and soil for experimental purposes. Some men heartily approve the choice; others condemn it. A summing up of the general feeling would show that, while the farm is not ideally suited for the purpose, the majority of growers are satisfied with the selection.

"Provided that a railway station be located on the Clinton-Louth township line," said E. D. Smith, M.P., Winona, "I think the provincial government acted wisely in accepting the Rittenhouse offer. I am told that the farm is a good fair average for fruit growing. Both climate and soil are very good, although not ideal. The choicest location, however, is not the best for experimental purposes. I hope that the government will go into the problems of hybridization and the introduction of new varieties in a whole-hearted manner. With this end in view a very high-class man as director should be employed."

Mr. Geo. F. Lewis, Winona, said that Mr. Rittenhouse's offer, being so generous, could not be overlooked since the farm itself is all that could be required. It contains a variety of soils, which is desirable for experimental work in fruit growing.

"The government has made a good selection in accepting the Rittenhouse farm," said Mr. J. W. Smith, Winona. "I consider the section in the vicinity of that farm one of the best in Canada for fruit growing, particularly peaches and strawberries. If the farm consists of a variety of soils, such as it is said to do, then it is about all that could be desired. I doubt if a suitable farm for the purpose could be secured in Grimsby or Winona, because for experimental purposes a farm not planted is required."

"Although rather out of the way, the farm is centralized and should be acceptable to the entire Niagara district," is the opinion of Mr. Geo. Chambers, Winona. "If an electric railway goes through that neighbourhood within the next three or four years, the locality is all right."

Directly opposed to the foregoing interviews are the opinions of Mr. A. B. Foran, Winona, and others here and there throughout the peninsula. Mr. Foran said: "The new experimental farm is very poorly located. It is difficult of access and the soil, as far as I can learn, is decidedly objectionable. If the farm was selected with the idea of forming a compromise between the eastern and western ends of the district, it has failed in its purpose; because neither end is satisfied."

"I think it was a mistake to locate the farm without consulting a representative body of fruit growers," said Mr. W. M. Orr, Fruitland. "The location for such a farm is best selected by men who know the A.B.C. of fruit growing. The cost of the land is a mere bagatelle, and the fact that a farm is offered to the government free of cost, though generous and commendable in itself, should be the last consideration. For experimental purposes, the Rittenhouse farm cannot be compared to others in the same section located directly under the mountain and exempt from frost. Another point that apparently was not taken into consideration when making the selection is the fact that the Rittenhouse farm, located as it is on the lake, is at least a week later than farms located nearer the mountain. This fact alone may mean the shutting out of some valuable fruit."

Two prominent fruit growers from the Winona-Grimsby district personally visited the farm and found to their own satisfaction that there is very little soil there suitable for peach growing, and that is an important consideration in the selection of a farm for experimental work in this district. Less than 20% of the surface soil is sandy in character and this is resting upon a high, hard pan.—A.B.C.

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Items of Interest

At the Winnipeg Indus. Exhbtn., the B.C. fruit exhibit attracted a great deal of attention. It was a credit to the province.

Mr. M. R. Baker, B.S.A., Guelph, has been appointed to a position at Ottawa, as assistant to Mr. Alex. McNeill, Chief, Fruit Division.

Apple packers are warned against misunderstanding the Fruit Marks Act. If you are in doubt, write to the Fruit Division, Ottawa, or to THE HORTICULTURIST for information.

The 10th annual exhibition of the Kincardine Horticultural Society was held on Aug. 30. The display of cut bloom, flowering and foliage plants was up to the average and did credit to the flower lovers of Kincardine.

Four new subscriptions for The Canadian Horticulturist for only $1.00. Can't you get up a club?

On Aug. 15, the Hamilton branch of the Ont. Veg. Grs. Assn. held its annual picnic at the Hotel Brant, Burlington. Several thousand people attended. Hon. Mr. Monteith, Minister of Agriculture, was present and spoke.

Mr. Bois, the B.C. fruit expert, that gave demonstrations in fruit packing last year for the Dom. Fruit Division, is now engaged to superintend apple packing operations for Mr. R. J. Graham, of Belleville.

The Evaporator Manufacturers' Association of Ontario held a meeting in Toronto recently and elected officers for the ensuing year, as follows: Pres., Geo. Mahler, Bothwell; vice-pres., R. J. Graham, Belleville; sec.-treas., O. E. Robinson, and 6 directors. The inspector is J. R. Finkle, Bowmanville.

Early in Aug. a conference was held in Toronto between a delegation representing the fruit growers and the traffic officials of the C.P. and G.T. Rys. Arrangements were discussed that will lead to a better handling of fruit in shipment to the west and to the seaboard.

At Scotland, Ont., a branch of the Ont. Veg. Grs. Assn. was formed in Aug. The officers are: McKenzie Malcolm, pres.; Fred. Smith, vice-pres.; E. G. Malcolm, sec.; and Samuel Hunter, director. At the initial meeting, 16 growers became members and it is expected that others will join soon.

Mr. J. P. Taylor, of Cape Town, South Africa, is in Canada buying apples for shipment to South Africa. He visited THE HORTICULTURIST and said that he wants good fruit and will pay good prices for it. Only the best stock is admitted to South Africa, as the law requires that all apples affected with disease or worms shall be destroyed at the port of lading, without recompense to the shippers.

In the vicinity of Colborne, Ont., which is one of the leading apple sections of the province, most of the largest orchards have been sold as they stand. The buyers will do the picking and packing, and the growers the hauling. Among the orchards sold are those of Jas. Thomas, for $1,125; John Coulter's, $1,000; Wilbert Eddy's, $1,000; John Usher's, of Wicklow, $750; Wilber Winter's, of Wicklow, $850; Chas. Doolittle's, of Wicklow, $450, and Dr. Robertson's, of Colborne, $450. All these orchards are within a radius of four miles.

We are offering The Canadian Horticulturist during September for a mere song. A postal note to the tune of $1.00 will pay for 4 new subscriptions for a year.

A series of demonstrations in box-packing is being given in Ont. by Mr. Stewart, an expert from Oregon, brought by the Fruit Division specially for the purpose. The schedule so far for this month is as follows: Sept. 1, Oakville; 6, Walkerton; 7, Owen Sound; 8, Thornbury; 10, Orillia; 11, Brighton; 12, Newcastle; 13, Oshawa. Demonstrations, also, will be given at the Toronto Exhibition on Sept. 3-4 and at the Niag. Dist. Exhibition in St. Catharines, on Sept. 14-15. The method of packing practised by Mr. Stewart differs from the one in Ont. One side, instead of the top, is removed, so that the contents may be readily seen and inspected. As there is less pressure on the sides than the top, the former may be taken off and replaced with greater ease.

See our special subscription rate for September. Clubs of four new subscriptions for 1 year accepted for $1.00.

In a letter to THE HORTICULTURIST, Mr. Francis Wayland Glen, of Brooklyn, N.Y., writes: "I have taken THE CANADIAN HORTICULTURIST for 20 years and only once in that time have I failed to receive my number regularly. I did not receive the one for July; kindly send me a copy. Fruits of all kinds are fine this year, and the price remains high for prime quality. The demand for the best is never fully supplied. We should have free trade in fruits between Canada and the United States. It will come soon. We are getting tired of monopoly. We are entering upon a radical revolution. We shall restore to power and influence the Declaration of Independence. I wish THE CANADIAN HORTICULTURIST great prosperity."

At a meeting of the shareholders of the Hamilton, Grimsby and Beamsville Railway, recently, it was definitely decided that the route of the proposed extension of the line to St. Catharines would not be by way of Vineland.

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enables you to hand-pick all the apples on the tree. Its extension feature permits it to run through the tree—not only to rest on the outside

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British Columbia Growers

The members of the B.C. Fruit Growers' Association work along lines differing from those of the members of any of the other fruit growers' associations. The membership of this association in 1905 was 100; the fee is $1 a member, the same as in other similar associations. The work of the association was explained to THE HORTICULTURIST by the secretary, Mr. W. J. Brandrith, while at Ottawa attending the fruit conference.

"We have branch associations of nine or more members each," said Mr. Brandrith. "Each member pays the main association 50 cts. The members of these branch associations enjoy all the benefits of membership, except that they are not allowed to vote at the association meetings, nor to hold office. We endeavor to make the association of as great value as possible to each member. One feature of our work which has been appreciated is the furnishing to the growers, the ratings of the commission dealers in the cities of B.C., Alta., Sask., Man. and the Yukon. We subscribe for Bradstreet's and get all its reports. These reports and our subscription costs us $75 per year. The members who are planning to make consignments of fruit to any dealers, and desire to know their financial standing, write me for the same, and I will get the reports and furnish them to the growers. This is a very popular part of our work.

"We also purchase supplies at wholesale prices and furnish them to our members at reduced rates. Early in the season, a price list of spraying materials, etc., is furnished to each member. They are offered the opportunity to purchase sulphate of copper, sulphur, Paris green, Gillett's lye, powdered hellebore, tissue paper for wrapping apples, peaches, pears, and tomatoes, plum paper, lining paper and cardboard. Goods are sold at 30 dys. net. Last year we sold pure Paris green in 10 lb. lots at 28 cts. per pound. We sold last year about 1½ tons pure Paris green, and 2½ tons sulphate copper and whale oil soap. We believe we have saved our members 15 to 20 per cent. on prices. Last year our Government grant was $1,250; this year we have asked for it to be increased by $750."

Subscribe now and get The Horticulturist for almost nothing. See announcement in this issue.

Sour Cherries—A Good Investment

Charles H. K. Baillie, F.R.H.S., Winona, Ont.

When one figures out the gross returns of a sour cherry orchard, planted on the right kind of soil, there is an inclination to go over one's calculations again, under the suspicion that there has been some error. A gross return of $2,520.00 from an orchard of 200 Montmorency cheery trees is an astounding estimate, but such is the case with a small orchard on Mr. E. D. Smith's fruit farm at Winona. The trees were planted about 14 years ago, from stock propagated on Mr. Smith's nurseries, and they received such treatment as any other orchard of sour cherries should receive.

From the time of first fruiting they have increased in yield every year, and this season the orchard averaged 14 baskets to a tree. They have received but one application of spray mixture this year, and that was Bordeaux, but, in spite of this scant spraying, there is scarcely a trace of rot. There is a pronounced difference in the size of the fruit of those trees which were pruned and those that were not, the former being the larger. Taking into consideration the superiority in size of fruit, it will be interesting to know how the yield of the pruned trees will compare with that of the unpruned ones. At a later date, further details will be furnished.

How to Pack Apples for Export

The following directions for packing apples for export have been issued by Mr. Eben James, Toronto. Particular attention is directed to the practice of racking the barrels after they are filled, not before:

The rule most observed by the largest export packers in Canada is to discard the old system of leaving apples to sweat in the orchard, believing that generally detrimental to keeping qualities, but pack as picked off the trees. As the apples are picked they are placed on a canvas table resembling a camp-bed, the firsts and seconds sorted out and culls discarded. The barrel should be placed on a plank, and the quarter hoops properly tightened and nailed. Apples of a good average size, not the largest nor smallest, but uniform, should be selected for the face, and placed stem-end down at the bottom of the barrel (after stems have been removed from face apples only), which should be covered as far as possible without leaving unnecessary holes; follow with a basket selected same as face, then fill in with standard fruit (per requirements) till half full: the barrel should then be jarred, but not shaken enough to displace the face and as each additional basket is filled in it should be jarred. WHEN FILLED IT SHOULD BE WELL RACKED WITH A CIRCULAR BOARD HAVING A PAD ON ONE SIDE. See that apples when well racked will be hardly an inch above barrel, carefully turn stem-ends up, with the exception of outer row, which are better blossom up; arrange proper sized apples so that any holes are filled, making barrel present an even surface slightly rising to centre, thereby insuring even pressure. Press in head, line and nail carefully, cut nails preferred. Brand neatly faced end.

Packer must be governed by variety of apples in height in barrel when pressing. Examine occasionally when packing, and if you find (providing you have racked well) that skin is severely dinged or broken, press lighter. Storage apples need very little pressing.

At the convention of the International Apple Shippers' Association, held early in Aug. at Niagara Falls, N.Y., many important topics of interest to Canadian apple men were discussed. The crops of Canada and the U.S. combined was estimated at 60,000,000 bbls. of good quality.

H. H. & S. Budgett & Co., Ltd.
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Parliament and the Fruit Industry

In the House of Commons, during the debate of the estimates of $150,000 for "the development of the live stock, dairying and fruit industries, the improvement of seeds and the promotion of the sale of food and other agricultural products," many subjects of interest to fruit growers were mentioned. Mr. J. E. Armstrong, M.P. for Lambton, said:

"We have been urging the minister to establish experimental fruit farms in the Niagara peninsula; many of his supporters from that district have been urging on him the importance of establishing such farms, but the minister has paid no attention to their appeals. In that part of the country another thing that we need is a separation of the departments of fruit and dairying. Again and again the minister has been urged to separate the dairy and fruit departments, but he continues to keep them under one head. Urgent requests have been submitted to the minister to effect the separation. How can he expect that Mr. Ruddick, Dairy Commissioner, can give proper attention to the fruit industry while, at the same time, he is expected to give full attention to the dairy industry?"

On another phase of the question, not directly referring to the administration of the fruit division, though concerning the industry, Mr. Armstrong said some interesting things. Speaking of the fruit industry he said: "This industry should be developed by 50%. Apples are the easiest products to be shipped, and our country is well adapted to the growth of this fruit. Yet the minister remains with folded arms, though opportunities present themselves for an extension of our market to Germany, which took $400,000 worth of our apples last year, and will, probably, be ready to increase that amount. The hon. gentleman says that if Emperor William will send his representative, he, the hon. minister, will communicate with that representative, but he is not going to open negotiations with a view to extending this market for our fruit growers. Let him look to the U.S. and see what they have accomplished. They were in the same position, with reference to the German tariff, as Canada is. But, a few months ago, they made arrangements with Germany whereby their apples go into that country at a great advantage over ours. The outcome of the minister's policy will be that we shall have only one market to which to ship our product. The German market is closed against us; practically, our only market is the market of Gt. Britain, which is open to the whole world as freely as it is to us. I feel confident that the time is coming when the Min. of Agric. and his government will have to take more definite action, to open the markets of the world to the products of the Canadian farm."

Keeping Quality of Plums

That some plums are much superior to others in keeping quality has been proved by Mr. Auguste Dupuis, director of the fruit experiment station, Village des Aulnaies, P.Q. Several varieties were set in a shed when picked, and some were found to be much more valuable as long keepers than others. Without cold storage certain varieties can be kept for some time and sold at a high price.

Over 50 varieties of European and American seedlings fruited last summer and fall. The Mirabelles, Bradshaw or Niagara, Grand Duke, Washington Lombard, Quackenboss, Hudson River, Dawson and Reine Claude de Montmorency bore a very large crop.

"As soon as they ripened," Mr. Dupuis writes THE HORTICULTURIST, "I kept plates of each variety on shelves in a cool outhouse, to find out how long they would remain in good condition. The first to mature were the Jaune hative, the Jaune très hative and Favorite hative, August 10 to 12, about three weeks before Green Gage and Washington. The last we picked were the Grand Duke, Coe's Golden Drop, R. Claude de Bavay and de Norbert, dark blue and round. This was on October 10 and 12. A big frost on October 11 damaged the Pond Seedlings, but did not injure the de Norbert, a valuable variety."

See our special subscription rate for September. Clubs of four new subscriptions for 1 year accepted for $1.00.

Items of Interest

The Toronto branch of the Ont. Veg. Grs. Assn. held its 8th annual excursion on Aug. 1, to St. Catharines. Over 600 persons availed themselves of the opportunity for a trip across the lake and an enjoyable outing. An excellent orchestra was in attendance and the day was spent in playing games, running races and doing many things that people are wont to do when taking a holiday. So large was the crowd that an extra boat had to be run to carry the people home. Before boarding the first boat, some unpleasant things occurred that resulted in a brief fight, reports of which, in the daily press, were greatly exaggerated. It is to be feared, however, that such reports may have been founded in part on the fact that the association permitted whiskey and wine to be offered as prizes in a few events, and THE HORTICULTURIST would suggest that such opportunity for criticism be not permitted at future gatherings.

Recently a committee appointed by the Ont. Veg. Grs. Assn. visited the O.A.C., Guelph, to gather information on what is being done at that institution for market gardeners. Another committee has been commissioned to visit the C.E.F., Ottawa, for the same purpose. This committee is comprised of three growers, Messrs. S. Baker and D. Smith, of Ottawa; and Mr. R. J. Bushell, the president of the Kingston branch.

An expert from the dept. of agric. at Washington, recently visited the trial grounds of Mr. H. H. Groff, at Simcoe, Ont., for the purpose of microscopic study of the methods of reproduction of the original wild species that enter into the composition of Mr. Groff's improved gladioli. The selection of Mr. Groff's production by the U.S. Dept. of agri., is a marked compliment both to Mr. Groff and to Canada.

It is reported that a large apple orchard, about 600 acres, will be operated a short distance from Montreal. The company is capitalized at $300,000. A Dominion charter has been secured under the name of the Dominion Orchard Co., Ltd. Arrangements have been made with several large European importers to take over the entire output of the orchard for several years.

On Aug. 14, the new experimental farm in the Niagara district was officially opened. Many prominent persons were present, including Hon. Nelson Monteith, Min. of Agric., Toronto; Pres. Creelman, O. A. C., Guelph; G. A. Putnam, Supt. Farmers' Institutes, Toronto; E. D. Smith, M.P.; E. A. Lancaster, M.P.; Dr. Jessop, M.L.A.; Mr. M. F. Rittenhouse, the donor, and others. An all-day picnic and an afternoon of speeches in Victoria Hall, made the occasion a pleasant and an important one.

Notwithstanding the failure of some of the shipments to Australasia last year, reports J. S. Larke, Canadian Commercial Agent, Sydney, N.S.W., there is likely to be inquiries for good Canadian apples in October. The prosperous condition of Australia has increased the number of purchasers of high-class fruit, hence there will be a demand for an increased quantity, for which good prices will be paid. Mr. Larke writes also that the crop of potatoes in New Zealand is much below what was expected. As a consequence, prices have gone up. In October and later, there will be a demand for any surplus Canada can supply, at good rates.

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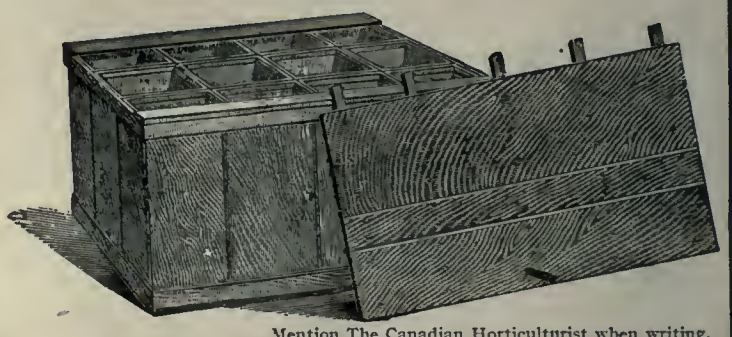

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Small Fruit Plants

Gooseberry, Red, White—Currants, Red, White, Black—Raspberry, Red, Yellow—Blackberries — Strawberry-Raspberry — Grapevines, Campbell's Early, Eaton, Worden, Moore's Early, Salem, etc., all hardy sorts—Strawberry Plants—House Plants—Roses—Rhubarb and Asparagus Roots—Order early.

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Notes

The "Youthful Poppy Fancier," illustrated in this issue, is the bright little son of Mr. W. C. McCalla, of St. Catharines.

The illustration on the front cover of this issue of THE HORTICULTURIST, was kindly furnished by Mr. Maxwell Smith, D.F.I., Vancouver.

At a recent meeting of the Ottawa branch of the Ont. Veg. Grs. Assn., the aspects of the civic market by-law prohibiting the purchase or forestalling of market produce before the hour of 8 a.m. in the summer and 9 a.m. in winter were considered. It was the feeling of those present that the by-law should be done away with.

"Target Brand."—The results of different tests of this Scale Destroyer by some of the largest orchard companies in the United States very conclusively demonstrate the facts as we advertise them. It has been tried alongside the home-made and proprietary remedies of the best class and, in every instance has outdone the whole of them. It seems to be the most deadly of all oil preparations yet produced and yet does not penetrate the bark nor do the least damage to either trees or buds. I have personally seen trees where it was applied when the buds had swollen considerable and not the least damage resulted. Its action on scale pests is slightly by penetration through their breathing pores, but mainly by the formation of a film which, though positively fatal to them, does not in the least interfere with the functions of the barks of the trees on which it may be applied.—W. H. Brand, Jordan Station.

THE HORTICULTURIST would direct attention to the Syringa purpurea maculata which is now offered for sale, and for the first time in Canada, by Stone & Wellington, Toronto. It is a variation of the popular "mock orange," but, instead of being a common white, it has a beautiful purple centre, the base of each petal being a blotch of purple, forming a ring of purple around the centre of the flower, making it an exceedingly distinct variety. This new spring-flowering shrub with a touch of color, comes very acceptable, as white flowering shrubs in spring are becoming tiresome

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It pays to use WINDSOR SALT for cheese making, as you will find out after your first trial.
Your dealer has it, or will get it for you.

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EIGHT BEAUTIFUL IRISES for Fall Planting. Send $1.00 for following choice collection free by mail, this month, Augustina, Celeste, Eugene Sue, Hector ,L'Avenir, Liband, Sampson, Silver King. Address C. ERNEST WOOLVERTON, Hardy Perennial Gardens, Grimsby, Ont.

TENDERS will be received by the undersigned up to the 30th September, 1906, for the sale of the Greenhouse or Conservatory, including the furnace and piping appurtenant thereto. They may be inspected by any interested party at Number 374 Victoria Street. A. R. DENISON, Architect, 18 and 20 King St. West, Toronto.

LANDSCAPE GARDENING, PLANS FOR PARKS, cemeteries, public or private grounds. Drawings made to scale. Any gardener may carry them out. Correspondence solicited. CHAS. E. WOOLVERTON, Landscape Designer, GRIMSBY.

WANTED—Persons to grow Mushrooms for us in waste spaces or barns, in gardens, orchards or small farms. $15 to $25 per week. Send stamp for sixteen-page illustrated booklet on Mushroom Culture and full particulars. MONTREAL SUPPLY CO., MONTREAL.

PROPERTY FOR SALE—Situated in Lundy's Lane, Township of Stamford, about one mile from city of Niagara Falls. It contains twenty acres, garden and fruit in bearing, in good cultivation. Possession in December. Apply for any information to MRS. E. J. LAW, Niagara Falls South.

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Orchids and Cacti, Bulbs and Seeds
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Best goods only required. Highest price obtained. Correspondence desired with growers.
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UNDER THE DIRECTION OF

The Ontario Department of Agriculture

The Band of the XIX Regiment will furnish music each day.

Hon. Nelson Monteith, Minister of Agriculture, and the Deputy Minister of Agriculture for Ontario, have been invited to attend.

The largest display of Fruit, Flowers and Vegetables ever held in the Niagara District.

OVER $1,000 IN PRIZES

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W. B. BURGOYNE (President)
ST. CATHARINES, ONT.

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The Canadian Horticulturist

Vol. XXIX OCTOBER, 1906 No. 10

A Report on the Spencer Seedless Apple

THE Spencer Seedless apple has invaded Canada. A company of prominent men in Toronto has been formed to promote the business. It is to be called the Spencer Seedless Apple Co., of Toronto. Among those gentlemen most interested are: Mr. J. T. Sheridan, president of the Pease Foundry Co., and Mr. A. G. Allan, of the White, Allan Co. At the request of the company, the Hon. John Dryden, until lately Minister of Agriculture for Ontario, visited Grand Junction, Col., which is said to be the home of the seedless apple. While there he investigated the merits of the apple. A full report of his observations, with conclusions, is here published.

While THE HORTICULTURIST knows that Mr. Dryden is sincere in his deductions, we feel that his investigations were not carried far enough to warrant such sweeping conclusions and, therefore, would advise fruit growers to be cautious in taking hold of this apple. It has been condemned by most fruit and nursery papers in the United States, and by many leading horticulturists, including Prof. John Craig, of Cornell, and Prof. Van Deman, former pomologist for the Department of Agriculture, Washington.

Questions concerning this apple that, as far as we know, have not been answered satisfactorily as yet, include the following:

Why have the various experiment stations in the United States and Canada never been given an opportunity to investigate and report on the quality of this fruit?

How has it been possible for the company back of the apple, in the short time since the apple has become known, to produce enough stock to enable it to supply 25,000 trees to the Canadian growers alone, to say nothing of the hundreds of thousands of trees that are being offered for sale at large prices in the United States and, we understand, in Great Britain also?

What guarantee will the growers who buy these trees have, that the stock they purchase are true to name and will the guarantee that, it is said, will be given, be a satisfactory one? It will be several years before these trees will come into bearing and many things may happen in the interval. Further comments may be found in the editorial column in this issue.

MR. DRYDEN'S REPORT

SPENCER SEEDLESS APPLE CO., OF TORONTO, LIMITED,—

Gentlemen,—Pursuant to arrangement I proceeded to Grand Junction, Colorado, for the purpose of personally examining the trees and fruit of the Spencer Seedless apple. I arrived early in the afternoon of Tuesday, September 11, and immediately drove out about two miles to the farm of Mr. Spencer. Here, I saw altogether 27 trees in full bearing.

It is the Best!

I would like to express my appreciation of the great improvements you have made in THE CANADIAN HORTICULTURIST. It is the best fruit paper I get, and I have about all that are published on this continent, and several from England. —Prof. F. C. Sears, Truro, N.S.

I was informed that the oldest trees were 12 years old, and the youngest in the orchard six years old. Twenty-six of these trees are planted in two rows, 13 in each, with other varieties of apples on either side. The additional tree stands alone, surrounded, also, by other varieties. I was informed that there were at least a dozen more trees scattered in different parts of the orchard. I spent some time in a close inspection of the growing trees, as well as the apple itself, with a view of determining what, in my judgment, would be its commercial value. It was a great pity I could not have delayed my visit until, say, the middle of October, when the fruit would have matured, showing its full size and natural color, but my return to Ireland at that time made it impossible to delay. The specimens I brought from Colorado show plenty of size, but are without a vestige of color. The topmost apples were just beginning to turn, and when mature, I am told, show a beautiful red with small yellow spots, giving a very pretty appearance.

There are, in my opinion, several characteristics which are essential in the production of a commercial apple suited to the requirements of the average fruit grower. First, a hearty and vigorous grower, insuring maturity without waiting too long, as in the case of some varieties with which I am familiar. In this respect I found that the Spencer Seedless apple fulfils every requirement. The general appearance of the trees, the luxuriant leaves, the length of the young shoots, as well as the size of the trees which I examined, considering their age, all indicated a quick growing tree.

Secondly, will they do well in the Canadian climate? That has yet to be tested in practice, but their abundant success in Grand Junction, showing a hardy character in a climate ranging from 100 degrees of heat in July and August to 12 or more below zero in midwinter, is an evidence that a similar result would be obtained in Canada.

The third essential is an early bearing quality. In this respect my visit leaves no doubt whatever. The first apple crop was given when these trees were four years old, and these were the only apples of that year produced in Mr. Spencer's orchard. A heavy frost on the night of April 17 destroyed everything else. The trees have continued to bear regularly ever since. This year, 1906, some of the young trees, being grown in a nursery in another state, and only about 15 inches high, carried some specimens of fruit until they were taken off in order that the growth of the trees should not be retarded. The entire experience with these apples show extremely early bearing tendencies.

My fourth essential characteristic is, will the Seedless apple tree bear a good crop and continue it year by year? From what I saw, as well as from repeated conversations with Mr. Spencer, I am satisfied as to this point also. Perhaps the answer which will appeal to the members of your company with the greatest force will be the appearance of the snap-shot photographs taken in the orchard as I was busy inspecting the

apples. (We are planning to publish cuts from these photographs in our next issue.—Ed.) These will show an abundant crop. Every tree carried all or more than the limbs should bear and compared splendidly with other varieties in the orchard. The nature of the early formation of the apple shows almost entire protection from the frost or damage from continued rain, guaranteeing a distinct advantage over any other variety, as illustrated by the crop the first year, while other varieties all failed.

Fifth, as to the size of the apple, the specimens presented to you with this report, which I personally plucked from the trees without a ladder, show a satisfactory average size, but without a tinge of color. I can wholly endorse the opinion of Prof. Crowley, sent to inspect for the Orange Judd Company of New York, that "they compare favorably in size with the Ben Davis or Baldwin, the average showing rather better than the latter variety."

Their keeping quality has been tested already, and sufficient proof is at hand to show they stand the test. Mr. Spencer will pick his present crop about the middle of October, and says they will be at their best about the first of March following.

There only remains for consideration the quality of the mature apple. At this date it is impossible from personal observation to form any accurate judgment of the flavor, but I can say that the texture is firm, solid and juicy. A few months hence, I hope to settle, according to my own taste, the point of flavor, which opinion I can only hope may express that of the majority who may have the opportunity of using it. In the meantime, I can only fall back on the opinion of other disinterested parties. Mr. Maynard, secretary of the National Association of Gardeners, says: "It is similar in flavor to the Baldwin, but more juicy, and in this respect, as well as in its apparent cooking qualities, similar to the Greening. The meat is firm, the texture fine and smooth and the quality of the flavor very good." Prof. Alex. Glehan, president of the West Virginia Horticultural Society, and J. F. Moore, join in the following statement: "In color the fruit is a dark, rich red with small yellow dots sprinkled over its surface. It is strictly a winter variety, not being ready for the market before the last of October, and in flavor compares favorably with the Wine Sap, and is a better keeper and shipper than the Ben Davis, the skin being smooth and firm but not undesirably tough."

From the above it would seem that the Spencer Seedless apple has, in my judgment, all the qualities necessary to make it a success as a "commercial apple." Added to this is the seedless characteristic, which will, as an attractive table apple, as a No. 1 cooking apple without seeds or core, as well as an evaporating apple, give it a value for many years far in advance of other varieties and which at the present time can scarcely be estimated.

Every apple of this variety, like every seedless orange, is not entirely without a seed. I was given a full liberty to pick and cut as many apples as I desired. I made full use of this privilege. The vast majority of the apples were absolutely seedless, but occasionally an apple, especially when taken from the side of the trees adjacent to the other varieties, showed one seed, seldom perfect, and apparently squeezed into the flesh of the apple, in one case within half an inch of the flower end, indicating that it had been caused by pollen from trees of another variety. This theory seems all the more plausible according to Mr. Spencer's view, because the proportion of single seeds found is always greater in a season where high winds prevail at the time the apples are in blossom.

A few words may be acceptable as to its history. The apple has not been originated by the operation of any special genius on the part of Mr. Spencer, except it be the genius to experiment continuously with the hope that something of value might some time be the result. In that spirit, Mr. Spencer has year after year planted apple seeds, watching especially anything peculiar. In the course of these operations he found the first seedless apple tree, which tree Mr. Spencer declares has been greatly improved by careful selection in budding and grafting. He has since then found other trees with peculiarities, which have yet to be tested as to their real value. He has a fondness for this kind of work, and continues it year after year. He believes he has the theory out of which will also come the stoneless peach and the pitless plum. Whatever the individuals may do or say whose business is disturbed by these strange freaks of nature, the general public should, and I believe will, hail them with delight, and give to such men as Mr. Spencer every encouragement in the production of superior varieties.

My personal conclusions are that the Spencer Seedless variety will force its way to a front place: Because as a "commercial apple" it has *intrinsic merit*; it matures and comes into bearing early; it has a beautiful appearance; it produces a good crop; it is a good medium size; and, being solid all through, produces more meat than a larger apple with the obnoxious seeds and core. According to the best evidence, its quality and texture are No. 1, while its keeping qualities are excellent. Without question, these characteristics give it the highest value among all other varieties.—(Signed) JOHN DRYDEN.

Preparing For Strawberries

The preparation of land for a new patch of strawberries is work that should be done this fall. Perhaps some of the readers of THE HORTICULTURIST have a piece of old sod land that they purpose to plant with strawberries. If so, the first consideration is to destroy the quantities of white grubs that always exist in such land. To do this, plow the land before cold weather sets in, and let it lie thus all winter.

In the early spring, plow again, harrow and sow some crop that can be cultivated during the summer. By the next fall, or at most the following spring, the land will be in the best shape for strawberries. The exposure in the upturned sod during the previous winter and the following cultivated crop will have destroyed the great majority of the white grubs, and the ground will be in an excellent state of cultivation.

Signs and Omens

Rabbits' feet are said to be lucky—but not in an orchard of young trees.

A boy stealing apples at night portends trouble—if you are a good shot.

It is a bad sign to see a neglected orchard on Friday—or any other day.

If you see a vision of greenbacks when you harvest your apples this fall, it is a sign of good times.

A few tons of manure scattered on an acre of orchard soil in the dark of the moon will conjure large crops.

A plow or a harrow standing on the lee side of a wire fence is rainy weather is a sign of hard times ahead for the owner.

To sell 13 peaches for a dozen on the 13th of the month, or any other day, is a sign of generosity on your part and good luck for the other fellow.

If you subscribe for THE CANADIAN HORTICULTURIST on Monday or Tuesday, or Wednesday, or Thursday, or Friday, or Saturday, or Sunday, you will be happy as long as it continues to come.

Little apples, wormy apples, deformed apples, and apples that are not apples, in the middle of a barrel is a sign that the packer is a fakir—and the goblins'll get him if he don't watch out.

When webs of fall web-worm are observed, either cut out the branches to which the web is fastened and burn, or destroy nests while on tree by holding a lighted torch beneath it.

The Fruit Marks Act*

FROM time to time charges are heard of dishonesty in packing apples. In the past it has been a favorite pastime with the newspaper

Packing that Pays

This box of apples was shown at the Niagara District Exhibition. It is a model. The pack is uniform and correct. The lace paper adds to the appearance.

men to picture the old grey-bearded deacon hiding the withered and wormy apples in the middle of the barrel, and it has afforded a spicy bit of reading for the public. For the past few years, however, very much less of this thing has been heard. The growing importance of the industry, which is ranking amongst the first in the province and is bringing nearly a million dollars into circulation annually, and the appreciation of our fruit in foreign markets demands respect.

The Fruit Marks Act owes its origin to these charges of dishonesty. The farmers lay under a grave charge which needed investigating. The result has proved that many things are true, but also that much of the trouble originates in second hands, and also that buyers are prone to kick on quality to drive a good bargain, and often with the intention of obtaining a rebate of the act. The speculator thinks that the act is entirely for his benefit, to protect him from buying poor apples, but does not seem to think it should prevent him from selling the same apples in the same or more fraudulent condition. The consumer also thinks that the act is framed in his behalf to protect him from the wicked grower. Both are mistaken to a great extent. The law was framed almost entirely in the interests of the producer, in order that packing may be uniform and that a barrel of apples, branded No. 1, may be above suspicion, and that a general feeling of confidence may exist which is so necessary to easy and profitable business, and also that the honest and reliable packer may not be informed by his careless and dishonest neighbor.

The Fruit Marks Act has had something to do with the user, but more is due to the growing pride in the great industry, and the feeling that confidence in the integrity of our packing is necessary to the proper growth and extension of our trade. Last year, owing to the unfortunate bad quality of our fruit, and irritation at the high prices which were ruling, the old cry revived to a certain extent. Much of the complaint unfortunately was de-

The Proper Bilge

A well packed box of apples should show a bilge as illustrated in the cut. Slackness results when box is not full enough to bilge.

served, especially in the local market, but a great deal was exaggerated, owing to the desire of the newspapers to provide something spicy for their readers, and to the unfortunate pleasure so many human beings have in attributing unworthy motives to their fellow beings.

Last season Mr. Vroom and I examined a great many apples, more than ever before in the same time. Two things were very evident as the result of our investigations. Too many third grade apples were shipped, and the absolute need of a standard for No. 2's was plainly evident; since then, this latter has been defined. Our apples were unfortunately of poor quality last year, and prices were high, which means, of course, that poor apples were packed. This thing was carried too far altogether, and a great many apples went forward that were altogether worthless, and most of them marked No. 2. It is unfortunate that those apples brought nearly the same price as better apples, in the hurry of the sales in London, and the poor facilities for examination that is so necessary. There is also a class of buyers that are going to buy the cheapest apples no matter what they are. They take the place of better apples however, and very much complaint and dissatisfaction is seen to arise. When I was in London I heard complaints both loud and deep over this class of apples, very similar to the murmurs we heard wafted over from St. John last fall. If only three-quarters of the apples had been shipped, results would have been better. The shipment of No. 3's, however, have come to stay, which makes it absolutely necessary to have the new standard for the No. 2's. I am of the opinion that No. 2's should be as far from spot, bruise, and worm holes as No. 1's; that spots, cracks, and other defective apples should grade No. 3, and that no larger percentage of defective apples should be allowed than would admit of speedy packing.

Violations of section 4 still continue. This section requires the name and address of the packer shall be on every barrel as well as the party and grade of the apple. Fictitious names are too often used by dealers, and always on poor lots of apples. When a man is

Apples or Cabbages—which?

This cut illustrates "the horrible example" in packing and wrapping apples. It was entered for competition at the Niagara District Exhibition. The fact that such was exhibited indicates that there are men still who do not know how to pack and wrap fruit. The apples in the box were excellent, but the manner of putting them up, disqualified the package.

*An address delivered by Mr. D. I. Fitch last winter at the N.S. Fruit Growers' Convention.

ashamed to put his name on apples it is a very good sign that they would better be kept at home and not sold at all. We noticed last season a lot of poor apples branded with the name of a Methodist minister deceased for many years, and having no descendant in the land. He was a dear old man, and would not have packed bad apples for the world. I knew him well, and have no doubt he is in the better land. We wish he had taken his stencil along with him, and several other bogus ones still in use. Some cases have arisen which seem to prove that grade marks are sometimes changed in second hands. It is well that growers when selling their apples are now compelled to brand them plainly No. 1, 2 or 3, as it was all too easy to add an X, particularly when tempted by a superfluity of No. 2's.

In conclusion we would say that we repudiate the idea that our apples are fraudulently packed to any great extent. Poor apples in plenty have been shipped, some that a well-bred and self-respecting hog might resist to eat. But we have found very little overfacing or wilful intention to deceive, the apples in nearly every case being marked to indicate that they were not a sham.

Fresh Grapes in Winter

A novel method of keeping grapes fresh, for marketing during the winter, is followed in the vineyards of France. When cutting the grapes, a piece of the vine five or six inches in length is left attached to the bunch. The cellar in which they are to be stored should have a low uniform temperature. In it are placed a number of bottles, wide necked and filled with water. Into the water are placed the vine stems, the bunches hanging outside.

Water is added to the bottles from time to time to replace that lost in evaporation through the stem and fruit. In this way the grapes may be sold in the winter as fresh as when cut in the fall; and although they come high, a ready sale is always found.

Repairing Broken Trees

Fruit trees, when heavily loaded, are often broken or split by the weight and by the wind. This condition may be remedied, when not too severe, by the following method:

Bind the divided portion with galvanized wire and draw them tight together by twisting the ends of the wire with a stick. Cover the wounded surfaces with grafting wax, or other material, to exclude air and the spores of fungi. When applying the wire, do not wind around each limb separately, or you will cut off the circulation of sap, and bring about the death of one or more of the limbs. Trees that are broken must be attended to at once.

The Keeping Qualities of Apples

THE time of harvesting apples has an effect on their keeping qualities. There can be no definite time advised. Each variety, of course, has its own particular season, but, also, each is affected by various local conditions. The degree of cultivation has a material effect on the maturing of the fruit, apples grown in highly cultivated orchards ripening much earlier than those grown on sod. Location is another potent factor, as orchards planted on hills will ripen their fruit much earlier than those in valleys. Soil also has its effect; apples grown on sandy soil ripening earlier than on clay. There are many similar factors; so, it is evident that a definite date cannot be recommended for harvesting. It is better, where long keeping is desired, to pick the apples early rather than to leave them hanging on the tree until fully matured. Those left late, however, are of better quality and have better color than the ones that are picked at an earlier stage.

There is a great deal to be learned regarding the keeping qualities of the various apples, and of the best methods of preserving them from decay. It is a noticeable fact that where apples have been picked from the same tree, at the same time and under the same conditions, and have been packed in the same box or barrel, rot will affect some of them much quicker than others. There are different reasons given for this, one of which is that the apples on the outer side of the tree mature earlier than those under the shade of the foliage on the interior, and consequently they are more apt to decay first. Pickers are always cautioned not to bruise the fruit for fear of rot. It has been noticed, however, that apples on the tops of barrels, bruised in pressing down the head, did not decay at all, the bruised portion often being composed of a corky substance that seemed incapable of rot. Where they did start to rot it was on some other part of the fruit. It is not merely necessary, in storage, to keep the apples as cool as possible without freezing, as we are so often taught. Proper care must be taken to pick the fruit at exactly the right time, and to put in cold storage immediately after picking.

Never allow apples to stand in piles or in barrels in the orchards. The rapid changes of temperature from the heat of noon to the chill of midnight causes them to ripen rapidly and is fatal to their long keeping. Soil and location also have an effect in this respect. The keeping quality of apples is a subject that should be studied carefully if successful apple growing is an object.

A Tree of Many Fruits

Frances Wayland Glen, Brooklyn, N.Y.

FORTY years ago I had in my garden more Tallman Sweet apple trees than I wanted, and less summer and autumn fruit than I desired. I grafted upon a Tallman Sweet 12 summer and autumn varieties, as near as I can now recall, Red Astrachan, Early Joe, Early Harvest, Early Strawberry, Benoni, Summer Pearmain, Sweet Bough, Autumn Strawberry, Gravenstein, Jersey Sweet, and Fameuse. After the buds upon the grafts began to grow, I cut off all but one bud of each variety, and left that bud to form the branch. The tree was well fed with stable manure and was healthy, and bore fine fruit of each variety.

I left some of the branches of the original Tallman Sweet so that I had 13 varieties upon the tree. All of these varieties received such food as came to them from the earth through the same trunk, and not until the sap reached the leaves of the different varieties was there any change. In the leaves the sap met 13 varieties of lungs. There the sap met the air, sunlight, dew and rain, and was converted into sweet, sub-acid and acid, and into red, striped, green and yellow apples of all shades, some ripening in the latter part of July, others in August September, October and November Does not this fact prove that the leaves are the lungs of the tree, and must be kept in a healthy condition for the tree to produce good fruit or to live?

Many times my plum trees, full of fine fruit, have been attacked with leaf blight, as we used to call it, and the fruit shrunk, withered and fell to the ground. We know now that it was an insect that produced the leaf blight. We thought then that it was something in the condition of the air or the sun's rays beyond our control. The insect destroyed the lung of the tree (its leaves), as bacteria destroy our lungs when we die from tuberculosis.

Cherry pits intended for planting should not be allowed to dry much after removal from the fruit. They should be washed clean and dried sufficiently in the shade to prevent mould, then mixed with clean, moist sand and buried in a dry place, covering with a few inches of earth, over which may be placed boards or flat stones to keep out mice.

Handling Grapes for Market

G. H. Carpenter, Fruitland, Ont.

IT is one thing to produce grapes of good marketable quality; it is a different matter to harvest and market them in such a way as to make the industry profitable. In this latter branch of the work, many fruit growers are unsuccessful; some through ignorance of the proper methods of grading and packing, more through carelessness in the work. Careless and shiftless methods of handling are detrimental to the trade.

In grapes we have one of our most tender fruits, one that is easily rendered unsalcable by rough usage. Furthermore, it is a product that is consumed almost wholly as a dessert fruit, lending itself only to such secondary products as wine and jam, which, considering the vast acreage in grapes, is a comparatively small outlet, and one used principally for the less valuable fruit. Consequently, the grower is largely at the control of the market and only fruit of a good quality, that is, properly graded and packed, will find ready sale. I was about to use the word "faced," but that is a term that has been abused by fraudulent packers to such an extent as to cause buyers to regard all faced fruit with suspicion. If those miserable frauds who persist in covering trash with a layer of good fruit were alone injured, it would not matter much; the practice would soon be stopped; but the fruit being unlabelled, its sale injures the whole market, and all growers of fruit. Such men when caught should be dealt with in proportion to their crime, which is no small affair.

Unlike many fruits, the grape will not ripen after being picked. It must be allowed to mature on the vine. Commence cutting when the dew is off in the morning, remove all green, broken and diseased berries, and pack carefully in the package in which the fruit is to be shipped. In this way, the fruit is handled but once, it is kept clean, the bloom is preserved and you have a nice, attractive package, which is always in demand on the local markets. In this system, which is the one universally adopted in the general trade, great care must be exercised in handling the fruit, and only personal supervision over pickers by those who understand the stage of maturity at which fruit should be picked, and proper methods of grading and packing, will insure the best success.

Many middlemen who have special markets whereby they place their fruit directly into the hands of the consumers, make use of specially prepared packages to suit their own particular trade. These packages bear the brand of the packer and serve to advertise both the fruit and the shipper. Where these are in use the fruit is graded and repacked in packing houses or other convenient places, and only fruit of the highest quality is made use of. Too much care cannot be exercised in the preparation of such packages. All extra cost and labor are fully compensated for by the high prices paid by consumers who desire the best quality of fruit direct from the vines. This principle is also made use of by unions and cooperative associations, and, in many cases, by individual growers who have been shrewd enough to advertise their business through the quality of the fruit handled, and have thus secured private customers.

Preparing Grapes for Shipment, Carleton Fruit Farm, St. Catharines

In the Midst of Plenty

The essential points in handling grapes are: handle the fruit as little as possible, consistent, of course, with the market to which you are catering; do not handle until ripe, then pick; keep out of the direct rays of the sun, and get them off your hands as quickly as possible so as to have them looking fresh when placed on the market. There is always a demand for the best. If we strive to put fruit up in a clean, neat and attractive way, in the way the people want it, or in such a way as to make them believe they want it, we need not worry about low prices or slow sales; the fruit will sell itself.

Orchard Notes

Examine the peach and plum trees for peach borer larvæ, and destroy all that are found.

A little wood ashes around the fruit trees is a good thing. Spread it thinly; too much in a place may injure or kill the trees.

If there is a tree in your orchard that yielded no fruit this year and looks like it will not live another year, dig it out of the way. It only serves as a brooding place for insects and fungi, and is very injurious in this way to the other trees.

The Bill-Board Nuisance

Prof. F. C. Sears, Truro, N.S.

ONE of several reasons which have always seemed to be legitimate causes for congratulation that we are "*not* as our cousins to the south of us," is our relative freedom from bill-boards. I am not as familiar as I might be with the upper and western provinces of the Dominion, but one cannot fail to be impressed with this difference when travelling in the Maritime Provinces as compared with travelling in the United States.

A year or two ago the writer took a railway journey out to the middle west, as far as Kansas City, and returned. For some reason the prevalence of what might be legitimately called "the bill-board nuisance" was brought more forcibly to his notice than ever before. Everything that was ever made from "The Incomparable White—the Car of Service" to "Ball-Bearing Garters" seemed to require a bill-board, and no landscape seemed sufficiently beautiful to escape. As we sped along the banks of the beautiful Hudson River, we were constantly reminded that "Gillett's Lye Eats Dirt," and ere we had realized the full significance of this gustatory peculiarity of the article in question we learned that "Delicacy Demands Pearline," or were admonished to "Let Gold Dust Twins Do Our Work."

WOULD SEE AMERICA FIRST

Rounding another curve of the road we came in sight of a beautiful stretch of rolling country with orchards and vineyards on the slopes; and scattered among the orchards and dotting the meadows below were a succession of boards, the size of the side of a house, advising the traveller to "See America First—Via the Louisville and Nashville R.R."; or that "Packers' Tar Soap" was as "Pure as the Pines"; or that "Armour's Simon Pure Lard" was the proper thing and so on. We wished that we *could* "see America first" and without this constant accompaniment of advertising jargon; we thought it possible that "Packers Tar Soap" *was* as "pure as the pines" but bill-boards announcing the fact were not half so pleasant to look at as the pines themselves. As for "Armour's Simon Pure Lard," while we didn't know then as well as we do now, just what definition Mr. Armour would give for "Simon Purity," it *did* occur to us that he might confine his bill-boards to localities where they would be less objectionable.

In other parts of the country some other commodities would take the lead in this fight for publicity. Perhaps it would be a broken, rugged country, the most beautiful of all naturally, with little mountain valleys scattered along the line of the railway and with farm houses nestled among the trees; and nestling close alongside, in apparent unconsciousness of the incongruity of the combination, would be an immense bottle with the laconic inscription "It's Wilson's—That's All." We thought it *was* all, the limit in fact, and turned with disgust from the marred, sign-besmirched landscape outside to study our fellow-passengers and wonder how many of them felt as we did, a sense of having been outraged by all this vulgar commercialism intruded upon the view.

In still other sections, the advertising mania takes another, though not less obnoxious, form. There are miles, yes whole states, where instead of the restful harmonious, or, at least, appropriate red or brown barn of our Canadian landscape, the view is almost constantly marred by barns and outbuildings of all kinds, which shriek at you in immense yellow letters on a black background that "HOOD'S CURES"!

It was certainly a relief to get back to Nova Scotia, where one can enjoy to the fullest extent the pleasures that come from a beautiful country unspoiled by signs. Even at Windsor Junction, where the beauties of the landscape are not sufficiently pronounced so that a few bill-boards would seriously mar the general effect, there were only two, and these modest affairs, setting forth in plain figures and letters that Clayton & Sons are clothing manufacturers in Halifax and that A. M. Bell & Co. of the same city are headquarters for hardware.

A TORONTO FIRM

But of late I have noticed that this sign-board mania is creeping into even this province. As yet, it is confined mostly to one firm and that an Ontario firm, the house of T. Eaton & Co., of Toronto. But there is no telling when our local firms may catch the disease. Now, I haven't the rabid objection to this firm that some of our local store-keepers have, which is perhaps very natural since their loss is my gain. But I *do* object to their dotting our country with their bill-boards and, particularly, when these boards represent, as many of them do, a gigantic female figure donning a garment which, however necessary to the proper adjustment of the feminine form, is *not* usually displayed in public.

The question then arises: "What are we going to do about it?" And that is a question which I should like all Canadian lovers of the beauties of nature to consider seriously. Cannot some method be devised to prevent the introduction of these unsightly advertising schemes into sections which are as yet free from them, and to reduce their number and confine them to the least objectionable localities where they have already gained a foothold. If our laws are not now such as to admit of our putting a stop to the indiscriminate distribution of bill-boards, they are surely capable of being amended if the public can be brought to see that one of its rights is being infringed upon. It may be a question just how much legal right the public has to the free enjoyment of the beauties of the landscape unencumbered by these unsightly objects; but, in these days when we are making a determined effort to save the beauties of Niagara and of other natural resources of our Dominion, is it not worth while to try to preserve undefiled the other natural beauties, the country over, which make Canada so goodly a land to look upon?

Top-Dressing Lawns

In the fall, lawns, tennis courts, cricket creases, and all kinds of sporting greens should receive a top-dressing of well-rotted barnyard manure or other fertilizing material. Stable manure is valuable for the purpose, if it is well rotted and free from weed seeds; coarse manure is objectionable, being unsightly, ill-odored and certain to contain undesirable seeds. Apply only a moderate dressing, evenly spread.

An earth mulch composed of equal parts of good clean soil and well-rotted manure is better than manure alone. For applying to the lawn this month, the compost should have been started late in August. As it is, however, there is plenty of time. Secure the materials at once, mix them and turn over occasionally and apply in November. A mulch of this nature not only fertilizes the soil but also, when spread evenly, it tends to smoothen any irregularities of the lawn surface.

Next spring, as soon as the ground is settled, rake off the manure or coarse remnants of the earth mulch. The rains and melting snows of winter and spring will have washed the soluble plant food out of the mulch into the soil. Thus, the turf will receive a stimulant and a protection that will bring forth a new degree of density and a brighter color for the new season.

An effective remedy for mealy bugs and scale on house plants is fir-tree oil. Apply with a rather stiff bristle brush.

Perennials, such as phlox, peony, iris, larkspur, lily-of-the-valley and ferns, improve by the division of the roots, and any person who loves flowers will help you to increase your stock.—N. S. Dunlop, Floral Dept. C.P.R.

A Glimpse of Autumn—Waiting for Thanksgiving

Lawn and Garden Notes for October

AUTUMN is come. The shortening hours of sunlight and the increasing sprightliness of the evening air betray its presence. It is the time of the falling of the leaves. The peaceful, quiet days of October become the season. They are restful after the busy turmoil and the heat of the summer that is gone. October is the twilight of the year, the passing from summer light to the dark of winter. It is a time for reflection.

When we review our successes and non-successes in matters pertaining to the garden during the past season, there are reflections that will present themselves to every mind gifted with the slightest power of contemplation. Have we made the most of our opportunities in the garden? Is there not some change that might have been made to improve the general scheme of arrangement? Have we allowed some helpless tree or shrub or plant to die for want of food, water or attention? These are some of the questions that come to us when we think.

In October, the evidence of our success or failure is plainly visible. Later, when summer blossom and leaf are seared by the autumn blast or hidden beneath a mantle of snow, the evidence will have almost vanished. Now is the time to reflect, to observe and to plan. Next season's results should be better than this.

THE KITCHEN GARDEN

If you have let the asparagus bed take care of itself since cutting the crop, you should treat it as directed in our question and answer department.

Squash, pumpkins, melons and such crops are easily injured by frost. They should be harvested before danger comes. If they are still in the garden and not injured, pull at once and put them in a shed where they will be cool and dry, but not liable to freezing. When harvesting, leave about an inch or so of the stem, as a stem broken off short induces rot. When severe frosts threaten, remove the cucurbits to a dry room where the temperature is just above the freezing point. Heat and moisture cause them to rot in a short time, so beware of a warm, damp cellar.

Take up some parsley roots and grow them in a box or pot in a light cellar or in a shed. Thus you will have a winter supply which will be relished.

Home grown radish and lettuce may be had for Christmas by sowing seed in a mild hotbed. Carefully watch the young plants so as to protect them in the event of heavy frosts or freezing.

If you intend to shell some peas or beans and want to do it quickly, let them dry thoroughly after picking and then run them through a common clothes wringer. This will separate the peas or beans from the hulls quickly without breaking them.

Winter celery should be banked up to protect it from severe frosts. It should all be stored away by the end of the month unless specially protected, in which case it may be safe to leave it out a week or two longer.

To have good seed potatoes for next spring, this is the best time to secure them. They are always cheapest in the fall. Early varieties of potatoes should be in the ground as early as possible in spring; if you wait till then to buy, you may be late in getting them planted. Get them ready this fall, whether you buy them or pick them out of your own crop. Pick them over carefully, selecting only the nicest ones, and then nail them up tight in a crate till spring. When planting time comes they will be ready.

Pull and store cabbage and dig beets, carrots, parsnips, and such crops, and put at once in the cellar. Some parsnips and salsify may be left in the ground all winter to be dug in spring.

Renew the old rhubarb patch by digging the roots, dividing them and set-

ting out a new plantation. Leave some roots, also, on the surface of the ground or put them in a cold frame to freeze. Later place them in the cellar on the floor or in a barrel where they will produce tender, juicy stalks for winter use. Watch the November issue of THE HORTICULTURIST for an article on this subject.

MUSHROOMS FOR NEW YEAR'S

Mushroom beds may be made any time in fall. Begin preparing the soil now, making up the bed in about three weeks, which will insure a crop for New Year's. Prepare the compost in a shed. Use fresh horse manure and turn it over every second day for 8 or 10 days, when it should be dry. If difficult to dry, add a little dry loam. Take care that the manure does not burn.

When the compost is in a suitable condition, prepare the bed in the cellar. The latter should have a minimum temperature of 50°, and a good, dry bottom. Place a 10-inch plank in the desired position and fill in with the manure. The bed must be made in successive layers, each being spread thin and thoroughly packed to prevent injury to the spawn from heating. A depth of 12 inches at the back sloping to 10 at the front is sufficient.

It is safe to spawn when the temperature does not exceed 90 degrees. Should it go above 100 degrees, the manure may be cooled with water. Break cakes of brick spawn into pieces the size of a hen's egg; and place the same two inches deep in the bed at intervals of eight inches each way. Smooth the bed with a spade and add a thin layer of loam if desired. In a week or 10 days the bed may be sprinkled with water, not much being necessary until the crop begins to show.

The bed should be kept at a normal temperature of 70 degrees. If it becomes dry, apply tepid water to the dry spots; but do not saturate the bed. Should the heat decline apply a covering of hay or other material to keep up the warmth. Further information on mushrooms soon will appear in the columns of THE HORTICULTURIST. Watch for it.

THE FLOWER GARDEN

At this season of the year, with the soil in the moist condition it is, the transplanting of herbaceous plants is

Bay View House and Lawn, Deseronto, Ont.

work well done. Such plants become established before winter sets in; and the work done now lessens that which it is usual to do in spring. Keep the border clear of all rubbish that may harbor insects and vermin.

Be sure and set out some tulip, hyacinth and narcissus bulbs this fall. The earlier it is done the better. Set them three or four inches deep and mulch the ground a little, and they will come through all right and bloom as soon as the snow is off. If you want a bed of them next spring, get a hustle on and plant the bulbs at once.

Renew the old lily clumps by taking the bulbs or offsets, dividing them and replanting this fall. Do it at once, so that they may become established before freezing weather. While lilies may have partial shade, do not plant them under trees. The best effect and growth may be had by planting amongst low shrubbery or border plants. After the ground is frozen, place a mulch of straw or evergreen boughs over the bulbs, to be gradually removed as spring advances.

October is the time to plan the arrangement of the new flower garden. If you desire formal beds, make them now. Cut out of the sod the desired shape, manure, dig deeply and allow to remain in a rough condition until spring. New informal borders also may be made at this time and in a similar manner.

CANNAS, DAHLIAS AND FOUR O'CLOCKS

Before frost has touched their roots, cannas should be dug and placed in the outhouse or shed safe from frost. When digging allow a small quantity of earth to adhere to the roots. Leave them in the shed for two or three weeks, being careful to prevent them being touched by frost. Then store in a fairly dry cellar where the temperature does not go below 45 degrees, nor become too warm. Should the furnace keep the cellar very hot, pack the roots in dry sand or earth and keep them in the coolest corner.

Dahlia roots will keep well in a cooler place in winter than canna roots, 35 to 40 degrees will suit them. A rather damp cellar is best for dahlias. Pack the roots in sand if the cellar is furnace heated. When digging, allow the earth about the roots to adhere. If the ground is wet at the time it is all the better, as it will cling more tenaciously to the roots. When lifted, cut off the tops about six inches above the point where the tubers are attached, and place the clumps in a sunny, airy place during the warm days until thoroughly dried, then store them. The adhering soil protects the neck of the tubers from injury and prevents exposure to the atmosphere.

Roots of the marvel of Peru, or Mirabilis, will keep over winter very well if dug before being frozen, and treated as recommended for dahlias. These plants are easily grown from seed in the first place, and make very showy border plants. The roots, like dahlia roots, will keep well in a cool, moist cellar.

SUCCULENT PLANTS AND CACTI

For century plants, *Agave*, a dry room or light cellar is preferable to store them in in winter, and a rather high temperature, 50 degrees, suits them best. Give them very little water in winter. The lobster cactus, *Epiphyllum*, is an exception to this rule, as the winter is the growing period of this early flowering variety of cacti. Avoid keeping century plants in a continuously low temperature near to freezing point in winter. Too much

water and a low temperature are responsible for failure often times with agaves and cacti.

CLIVIA AND THE AFRICAN LILY

These plants should be wintered in the pots they are growing in, either in a light cellar or cool room in a temperature of 45 to 50 degrees. The roots must never become really dry; in fact, the foliage should be kept green and growing slightly, if possible, so that a dark cold cellar is not as suitable for them as a cool light cellar or cool room in winter. These are two of the most showy lawn plants we have for partially shaded positions in summer. Their lily-like flowers are very showy and attractive, and are too seldom seen on lawns.

GLADIOLI

The corms or bulbs of these should be dried off partially before being put in the cellar or stored for the winter. A fairly dry cellar and a temperature of 45 degrees will suit them. If the atmosphere of the cellar or room where they are stored is very dry, pack the corms in dry sand. In a damp cellar, tie them up in bunches to the joists, or place in paper bags.

POTTING BULBS

If you did not pot any hyacinths or narcissi in September, there is still plenty of time, but the earlier planted bulbs usually give the best results. A good place to bury the pots is in the garden where they can be protected with leaves if severe frosts set in, or they can be put in the cellar or cold frame and covered as directed in the last issue of THE HORTICULTURIST. When freesia bulbs are potted place them in the window at once. These do not require a cool damp place to start in. Water freesia bulbs sparingly until growth has well commenced. Freesias are one of the best and sweetest flowering bulbs we have for winter use.

BULBS IN WATER BOWLS

Chinese sacred lilies, the paper white narcissus and some varieties of the polyanthus narcissus may be grown in stones and water. Start them in October or November. Select strong bulbs for best results. A few weeks before the plants come into bloom, add some ammonia to the water.

Hyacinths in glasses are a pleasing addition to the winter window garden. Place the bulbs in a hyacinth glass containing a little rain water and some charcoal. Do not allow the water to rise much above the base of the bulbs but always keep them in contact. Keep the bulbs in a dark, cool place until well rooted; then bring into the light. Change the water every three days, and never let it freeze.

FALL CARE OF LAWNS

Top-dress the lawn as recommended in another column of this issue. Use stable manure if you must, but an earth mulch is better. Bone meal is a good fertilizer; it is cheap and lasting.

Most lawns are improved by an occasional dressing of lime. It will sweeten the soil, and rid the lawn of many plants, such as moss, that thrive in sour soil. Apply air-slaked lime, after the ground has frozen, at the rate of 40 bushels to the acre, that is, three quarts to each 100 square feet of turf.

Plant Bulbs for Hyacinths Like These Next Spring

Preparing Grapes for Winter Use

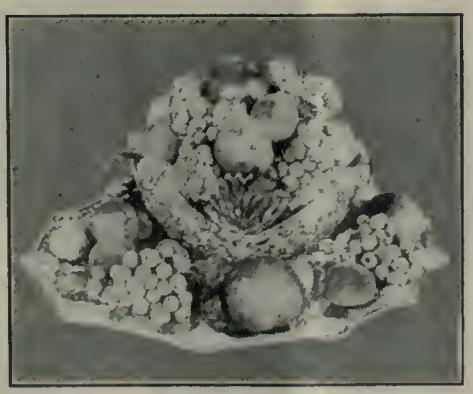
GRAPES constitute a perfect nutriment according to the analysis of a French chemist. Their nutritive qualities are analogous to those of milk. Whether eaten in a fresh state or preserved, they are not only nutritious, but also esteemed as most delicious and palatable fruit. As a winter delicacy, preserved grapes are a boon to the house-keeper.

UNFERMENTED WINE

Take 20 pounds of Concord grapes and pick carefully from the stems. Crush the grapes and put with two or three quarts of water in a porcelain kettle on the stove. When at boiling heat, separate the juice from the pulp and skins; then strain through a sieve or colander, using a little more water. Add six pounds of granulated sugar to the grapes and, when it is dissolved, strain very carefully through a thick cloth. Enough water may be added to make three gallons. Then heat and pour immediately into jars and seal up tightly.

GRAPE WINE

To make fermented grape wine, use 20 pounds of grapes, six quarts of boiling water and 10 pounds of sugar.



Fresh Fruits fot the Table

Mash the grapes in a stone jar, pour on the boiling water and let it stand three days, covering the jar to keep out dust. Strain the fruit and juice through a cheese-cloth bag, return the juice to the jar, add the sugar and let it remain until fermentation has ceased. Take off the scum, strain the juice and then bottle tightly, pouring melted sealing wax on the corks. Lay the bottles on their sides in a cool place.

SPICED GRAPES

The formula for spiced grapes is five pounds of grapes, four pounds of sugar, one pint of vinegar, one tablespoonful, each, of cloves, allspice, and cinnamon, and one-half tablespoonful of mace. Pulp the grapes; place the pulp on the fire and heat slowly, cooking about five minutes. Turn the fruit into a coarse sieve and press the pulp through, thus separating it from the seeds. Place the skins with this pulp, and weigh the

whole. Make a syrup of the sugar, vinegar and spices. When the sugar is dissolved, boil the fruit in the syrup half an hour, then bottle.

GRAPE PRESERVES

Pulp the grapes, retaining the skins. Boil the pulp slowly until the seeds can be seen to loosen, then put into a sieve and press the pulp through. Add a little water to the skins, and cook until tender. Place the pulp and skins together and measure, allowing to each pint a pound of sugar. Boil the whole together for 15 minutes, when it should be thick enough; if not, boil until satisfactory. Fifteen minutes will, however, be sufficient in most cases, provided too much water was not added to the skins for boiling.

GRAPE CATSUP

Boil the grapes, skins and all, until soft. When they are boiling, weigh out six pounds of sugar to every nine pounds of grapes. Strain the fruit through a colander, add the sugar, and boil slowly until quite thick. Then add one tablespoonful, each, of cloves, allspice, cinnamon and black pepper; and also one quart of vinegar. If the catsup is thinner than desired, after the addition of the vinegar, let it boil slowly, stirring constantly, until it is of the required consistency.—J. R. C.

The Amateur Greenhouse

DO not forget that many of your ferns and palms will require repotting this fall. It may not be necessary to put them into larger sized pots, unless they are root-bound. Take them out of the old pots, clean the roots by removing the earth, and replace with fresh soil in pots of the same size. The plants then will have a new lease of life and will show their appreciation by growing more freely and more strong.

A Bank of Decorative Plants at Canadian National Exhibition

PREPARE A COMPOST

Now is a good time to prepare a compost heap for use next year. The first and most important consideration is to procure the proper kind of soil. Find the soil that is suitable, and, though it may be some trouble and expense, get it; it will in the future amply repay the initial cost. The proper kind is fresh, fibrous loam, soil that has never grown an artificial crop. Old, worn-out soil cannot be artificially made fertile; no chemical ingredients will restore the properties and elements of the virgin land. It must be fresh; if possible, the top three inches of an old pasture.

The compost heap is prepared by piling alternate layers of this soil, six inches deep, and of fresh cow manure, three inches deep. Where the latter is not procurable, use short stable manure. Any chemical fertilizer that is to be added may be reserved until the compost is to be used. Shape the pile with vertical sides and flat top. To accelerate decomposition, make a number of deep holes with a crowbar, thus permitting the penetration of water. If this pile is prepared now, it can be chopped down before winter sets in, and thrown into a long heap; this will mix it and make it fit for use in the spring. If probably suitable for use soon, put sufficient in a dry shed to last through the winter.

CYCLAMEN

Cyclamen for winter flowering in 1907 should be sown now. Most persons sow the seeds broadcast in pans. This method gives very good results, but they may be sown one inch apart each way. The pans should be three inches deep and filled with soil composed of three parts of good loam and one part of well-rotted cow manure or leaf mould. To insure good germination of seed, place a thin layer of pure sand on the surface.

ROMAN HYACINTHS

Roman hyacinths may be had for the holiday season by planting the bulbs now. Plant in pots or pans with the bulb just below the surface of the soil. Use rich soil and, after planting, soak it with water. Then cover the pots with three or four inches of stable litter or cinders. Make occasional examinations and, if they are found dry, soak again with water, enough to penetrate both covering and soil to the roots. If buried outside and they become slightly frozen, no harm will be done if they are left to thaw out naturally. It is best not to handle them when frozen. Bring them to the light early in November.

FREESIAS

Plant freesias in five or six inch pots. Place the bulbs about an inch below the surface of the soil. A half dozen may be put in a pot, placing them one inch apart. Freesias do not require putting outside or covering of any kind. Put the pots on the bench. When growth appears they should have plenty of daylight and a temperature at night of 55 or 60 degrees. If a large supply of freesias is desired, grow them directly on the bench in four inches of soil. Place the bulbs at intervals of one inch in rows four inches apart.

SPIREA JAPONICA

This is a popular greenhouse plant flowering during spring. All that is necessary is to pot up the clumps in autumn, stand them in a sheltered place, and water when necessary. Then, in the new year, take them to the greenhouse, and let them come into flower gradually.

Why Not Cooperative Experiments With Vegetables?

WHY should not the Experimental Union of the Ontario Agricultural College carry out cooperative experiments with vegetables in different parts of the province? I am convinced that something should be done along

Good Things from the Garden

that line. I have looked up information on the subject, particularly that contained in the annual reports of the union for the years 1904 and 1905. The objects of the union and the manner in which the work is carried on is outlined in the following quotation from the report for 1905:

"Five years after the college was started, the officers, students, and exstudents formed themselves into an association under the name of the 'Ontario Agricultural and Experimental Union.' The objects of the association, as formulated at that time, were as follows: 'To form a bond of union among the officers and students, past and present, of the Ontario Agricultural College and Experimental Farm; to promote their intercourse with the view to mutual information; to discuss subjects bearing on the wide field of agriculture, with its allied sciences and arts; to hear papers and addresses delivered by competent parties; and to meet at least once annually at the Ontario Agricultural College.' In 1886 the members of this association appointed a committee to confer with the officers of the college, with the object of establishing a system of co-operative experiments throughout the province. Letters were written to members of the union, and 12 consented to conduct experiments with fertilizers and field crops on their own farms in the year 1886. From that time to the present, the work has gradually branched off on different lines until it has touched on several phases of agricultural work.

"In the spring of each year, circulars outlining the cooperative work are distributed by the agricultural committee appointed by the Experimental Union. Those asked to take part in the scheme of cooperation may be classified as follows: (1) The officers and students, past and present, of the Ontario Agricultural College, who pay an annual fee of 50 cents, and have control of the executive work of the Experimental Union; (2) the experimenters of former years who have done satisfactory work; (3) leading farmers, gardeners, and others, whose names have been suggested by secretaries of farmers' institutes, secretaries of agricultural societies, principals of collegiate institutes, inspectors of public schools, and others; and (4) various persons who have seen the experiments of other people, or have in some way heard of the work and wish to assist in the movement by conducting experiments on their own farms. The circulars are distributed in the order here given, starting first by sending to those who have been connected with the college and are therefore trained for the work, and finishing the distribution by sending to those engaged in some branch of practical agriculture who have not conducted experiments previously, but who wish to undertake the work."

In seeking information regarding the work of the union, I was much pleased to find that, in 1904, Prof. C. A. Zavitz started conducting experiments in sweet corn, with eight successful experimenters, and this number was increased to 21 in 1905, and there are about 160 persons conducting experiments with sweet corn this year.

This year, also, Prof. Hutt is making a series of experiments with a dozen varieties of tomatoes, in half a dozen canning sections. But, will the canning factory make its decision from the selfish, economical side; that is, from the tomato that will give the least waste, or from the standpoint of quality when canned? Let us hope by all means that it will be the latter.

Outside of the under-glass crops, the growing of vegetables is the highest type of agriculture. It is plain that as yet there has been comparatively little done in conducting experiments with vegetables throughout this province, looking not only towards increased yield, but to what is of more importance, a higher standard of quality. If we can get that *quality* by fertilization of soil, or cultivation, or by breeding up a higher type, our labor will not be in vain. Now that the vegetable growers have a provincial association, I think it would be fitting and proper for them to appoint a committee to draft their requirements, and present them to the Experimental Union at its next annual meeting in December.—A Truck Farmer.

Exhibit of Onions at Canadian National

Harvesting and Storing Vegetable Crops

THE principles that are involved in the storing of vegetable crops differ with the various classes. One of the most important points to bear in mind is the fact that much of the decay of vegetables in storage is not the fault of the storage, but is due to the work of diseases with which the crops are infested before they are put in storage. Discard all specimens that are bruised and which are likely to decay. The practice of a few prominent growers may be read in the following paragraphs:

POTATOES AND GARDEN ROOTS

"The best place to store potatoes and garden root crops," said Mr. Jas. Guthrie of Dixie, Ont., to THE HORTICULTURIST, "is in a root house, isolated and specially constructed. Dig the cellar four feet deep and over it construct a house, well roofed with cedar. Around the sides, bank with earth about 2½ feet deep, using sods as first tier next the wood. Keep the house dark, but ventilate every 12 feet.

"In a roothouse like this, the vegetables come out in spring in fresh condition. They are also easy to get at when needed in winter. Exclusion of light is important. It makes potatoes green and spoils the cooking qualities. This is illustrated sometimes in the sale of potatoes in cities. Often, the purchaser immediately places them in a well-lighted cellar, and soon they become poor in quality. He then blames the grower for supplying poor stock. This is scarcely fair, as the fault lay with the man who bought the goods."

PARSNIPS

In the fall some growers take up only as many parsnips as are needed for domestic use and for sale during the winter. The rest are left in the ground until spring. In digging, leave in the soil as long as possible, but dig before the frost binds up the ground. Store in a cool cellar, and on a sand floor if possible. If the cellar contains a furnace and the atmosphere is warm, it is better to cover the parsnips with sand to prevent wilting.

"Parsnips left in the ground and dug in the spring will not keep as long as those harvested in fall and stored in pits," said Mr. James Daudridge, of Humber Bay, Ont. "In some soils they are heaved by frost. Sometimes they are injured by the ice and snow forming a crust around the crowns; when thaws come, the crowns will start to rot."

CABBAGES AND CAULIFLOWER

In storing late cabbages, be absolutely certain, primarily, that they are not infested with the black-rot fungus. Another essential for successful storage is that the heads be kept at a low temperature, nearly to freezing point. Some vegetable gardeners claim that if the cabbage is allowed to freeze in the fall and kept so all winter it will keep in good condition until March or April. This method is dangerous, however, as there is a great liability of losing the entire crop when the heads dry out in the spring. The best and safest method is to keep the cabbages as near freezing point as possible, at a nearly constant temperature, without allowing them to become actually frozen hard. In this manner they will keep until spring and remain in good condition.

"Late cauliflowers head about October 1," said Mr. T. W. Stephens, of Aurora, Ont., to THE HORTICULTURIST. "They should be harvested at once. Trim off the largest leaves and store, root and all, in a dry cellar. Beware of dampness, as it causes rot. Store on the floor. Cauliflowers may be stored in boxes or barrels if not filled too full. When properly stored, they should keep until February or March."

STORING CELERY IN SAWDUST

Most growers pack celery in sand. While the practice is a good one, there are others who follow a different method of procedure. One of these is Mr. J. C. Black, of Truro, N.S., a well-known authority on these matters in his native province. "When storing celery," he writes, "I used to pack in earth in the basement of a barn, but later on I adopted the plan of packing in sawdust. In taking up the plants in the field, they must be handled carefully so as not to break or bruise the stock; the latter hastens decay. Leave the roots on and cut off a few of the loose outside stalks and any that may have got bruised or broken, then cart to the cellar.

"Have on hand some damp, not wet, sawdust and some boards. Begin next the wall, and lay first about three inches of sawdust and saturate it well with water, then pack one tier of celery as close together as possible and bank with sawdust slightly moist. Set another row similarly and pack as before, banking about one-half or two-thirds of the height of the stalks. Set the plants upright or they will grow crooked.

"Follow this plan until a space is set about three feet wide, then place a board 8 or 10 inches wide against the last row of celery, and fasten it with stakes. About eight inches from this put another board, both, of course, on their edges. This will leave an eight inch space between them. Pack against the latter board until again three feet wide, then leave another space of eight inches. The spaces are for the purpose of ease in inspecting the condition of the celery and for applying water occasionally to the roots without wetting the tops, which causes decay.

"In this way I have stored thousands of stalks, with good success. Of course, everyone has not access to sawdust; in that case, earth will do, but celery keeps better and comes out brighter and cleaner from the sawdust. This method can be adopted for family use in a small way by packing in boxes. The temperature should be kept low but not to the freezing point."

Fruits, Flowers and Vegetables of Niagara District Horticultural Exhibition

OUR QUESTION AND ANSWER DEPARTMENT

Readers of The Horticulturist are invited to submit Questions on any phase of Horticultural work

Harvesting Kieffer Pears

At what stage of maturity should Kieffer pears be picked, and in what manner should they be handled to ensure the best quality, and at the same time to retain their value as keepers?—H.A.R., Ivan, Ont.

For export we usually pick Kieffer pears the first and second weeks of October. For home or domestic purposes we allow them to remain on the trees a little longer in order to reach a more advanced stage of maturity. After they are picked their maturity may be accelerated or delayed according as they are kept in a dry warm, or a dry cool place. For canning or preserving, they should be thoroughly matured and cooked a little longer than other pears. They are then hard to excel in sprightly excellent flavor.—Answered by A. W. Peart, Burlington.

Vine Peach

I am sending to The Horticulturist a specimen of a vine fruit that is a novelty. Identify and mention value.—C.H.C., Fruitland, Ont.

The fruit submitted is known specifically as *Cucumis melo chito*. It has various common names, such as vine peach, garden lemon, orange melon and vegetable orange. Although scarcely edible in its natural state, it is useful for the making of preserves and pickles. It has no commercial value. A few vines are valuable in the home garden. It can be grown in most parts of the province.

The Walnut Datana

The Walnut Datana caterpillar has put in an appearance here and is injuring the bitter and stag bark hickories and the black walnut. Kindly outline its life history and suggest a remedy.—J.M.F., Abbatsford, Que.

The Walnut Datana is frequently destructive on walnuts, hickories, oak and even apple trees. The female moth lays a large batch of eggs (50-100) on the surface of a leaf. The caterpillars require from four to six weeks to reach full growth. When about to moult, they descend to the trunk of the tree and collect in large numbers; at this time the whole batch is readily destroyed. When ready to pupate the caterpillars descend to the ground (usually at night) and burrow to a depth of two or three inches. There they change into naked brown pupæ and remain until the following July. There is, therefore, but one brood each season.

The best method of treatment is to destroy the caterpillars as they congregate on the trunk at moulting periods, and to destroy the pupæ in the ground by allowing hogs to root in the infested area or by putting in poultry. Insecticides are hardly practicable.—Answered by Prof. W. Lochhead, St. Anne de Bellevue, Que.

White-Flowered Fuschias

Is there a fuschia with white flowers; if so, where can plants be obtained?—L.L.S., Moncton, N.B.

I do not know of a pure white-flowered fuchsia. There are several varieties with white corollas and colored sepals and vice versa. These can be obtained from the florists and plant men who advertise in the columns of The Horticulturist.—Answered by Thos. Manton, Eglinton, Ont.

Storing Flower Seeds

How and where should flower seeds be stored?—R.A.S., Calgary.

Seeds should be well dried before being stored. Spread them out thinly whether in or out of the pods, on trays or shelves, or in shallow boxes, in a dry airy room. When quite dry, place them in paper bags and hang the bags up in a dry cool room away from strong fire heat in a temperature of about 40 to 50 degrees. Dampness and extreme stove or artificial heat are not good for seeds. Pick seeds in dry weather.—Answered by Wm. Hunt, O.A.C., Guelph.

Fall Work with Asparagus

I have started a bed of asparagus. Does it require any attention this fall?—T.M.A., Windsor, Ont.

When the tops are sufficiently dried so they can be broken down by the harrow they should be raked together and burned. The surface of the bed should then have a top dressing of well-rotted stable manure which should be worked into the soil this fall. Manure left on the surface until spring will prevent early growth.

Wintering Parsnips

Is it profitable to leave parsnips in the ground all winter?—W.B.D., Sussex, N.B.

Digging and storing in well-ventilated bins in a cool cellar is the most profitable way of keeping parsnips. First, digging in the fall saves time in spring when labor is scarce. Second, you have a longer period to market in. Third, no matter how favorable the winter, you are bound to lose a percentage of crop wintered out of doors. Fourth, the best ground to raise parsnips on is a moist black loam which will always heave in winter. Parsnips wintered outside have a superior flavor to that of cellar stowed, but all local growers agree that cellar wintering is by far the most profitable.—Answered by Thos. Stokes, Niagara Falls South.

Lettuce for Christmas

I have a small greenhouse and want to grow lettuce for Christmas. When should the seed be sown, and how should the young plants be cared for?—A.P., Kingston.

The seed should be sown about October 15. Sow in flats. When two or three inches high, transplant to the bench four inches apart each way. There it will develop to good-sized heads. Water only on bright days, and apply the water in the forenoon so that it will be dry before night. Apply direct to the soil. Do not sprinkle the plants as it will cause the heart to rot. Watering in dull weather or at night also induces rot.

Bleaching and Packing Celery

Kindly describe the best method of bleaching, packing and marketing celery, and suitable crate for shipping.—Wm. McS., Guelph.

Great care should be exercised in the bleaching of celery. To have nice, crisp, healthy stalks, the celery should be bleached before it reaches maturity. Boards should be used that will not reach to the top of the celery because, if they cover the leaves, the appearance will be spoiled. The boards first should be laid down close to the roots of the celery and then drawn up slowly, bringing up the stalks until the board becomes bound in the leaves. This will hold the board firmly and stakes will not be required.

Celery should be cut before becoming too white and allowed to whiten after packing in the crate. Great care should be used in washing. All dirt should be removed and then the stalks thoroughly washed in clean water. Never scrub celery with a stiff brush, because when scraped it will rust and spoil the appearance.

The best crate for shipping in summer and early fall is a slatted one, similar to the American berry crate. In winter a closed crate is better. Care should be used in sampling. By making two or more grades better results may be obtained. The celery should be packed in rows, laying it flat in the crate, and reversing each row until the crate is full. Cover with a wet cloth. Pack firmly and keep from the air.—Answered by Geo. Syme, Jr., Carlton West, Ont.

The Canadian Horticulturist

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The Only Horticultural Magazine in the Dominion

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APPLE TRADE IN DANGER

A movement is on foot to bring in large quantities of apples from New York state and store them in Ontario, and later repack them for the British market. The men behind the scheme intend to try and influence the Dominion Government to allow the apples to come to Canada, be stored and packed, and passed through for export without paying duty.

Many Ontario buyers, when they went out to look at the orchards in the Northumberland, Durham and Prince Edward region, found the winter apple crop very short, and the apples that were there had been bought up by a few dealers very early. They found, also, that apples were more plentiful and very much cheaper in New York state. Several of them at the Apple Shippers' meeting in Niagara Falls, August 2 and 3, who had already made trips through New York state, were seriously considering the purchasing of large quantities of this stock. It is likely that since that time they have made these purchases, because the prices have gone up in Ontario and have not improved materially in New York state. Just now there appears to be a hitch in the proceedings. These apples, if sold now, would realize little or no profit, since there is a surplus of early summer and fall apples. They cannot be stored in New York, except in the large commercial storehouses, and this is where they ran against a snag. Some of the heavy American apple plungers, it is understood, noting this influx of Canadian apple buyers, proceeded to buy control of all the available cold storage, with the result that now that the Canadians have bought their stock, they can only store it by giving the prospective profits to the men who control the storage. One of their strong reasons, therefore, for storing at Colborne and Brighton will be to secure storage, since they cannot procure it cheaply in New York state.

Perhaps a more important reason would be that they could repack the apples during the winter months; and, more important still, they could possibly, in some way or another, work a lot of them off as Canadian grown apples, and thus receive the enhanced price that such a reputation would give them. Even if they were obliged to declare the country of origin, they could make the fact that they were packed in Canada so prominent that they would receive all the benefits that accrue to Canadians as the result of the enforcement of the Fruit Marks Act.

The effect upon Canadian trade would be to increase the quantity of Canadian packed fruit, and to that extent depreciate the price. Another feature that is not to be overlooked is that we are comparatively free from at least one insect that is altogether too common in New York apples, namely, the "railroad worm," or apple maggot. The railroad worm is comparatively harmless when introduced in a few apples that are consumed within towns and cities where there is a very small chance of the worm being able to complete its life history and propagate itself the next year; but, if these apples are stored in the frost-proof storehouses of Trenton and Colborne, in the middle of the largest orchards in Canada, it would be a distinct menace to the apple industry, and on that ground, if upon no other, it would be dangerous to store them.

Such action as is proposed would mean loss and injury to our apple trade. A note of protest from apple growers should be sounded from one end of Canada to the other. The scheme should not be tolerated. The government should protect our apple interests by demanding the payment of the regular tariff rate on all apples that come into the country, whether for consumption here or elsewhere.

THE SEEDLESS APPLE

The Horticulturist would advise its readers to go slow in the matter of investing in trees of the Spencer Seedless apple. It must be borne in mind that this apple has not been tested in Canada, and that many years must pass before definite results and conclusions can be reached. Should it prove to be no good, as it is said to be by the American horticultural press, and by competent men who have investigated it, our fruit growers will not lose anything.

The Spencer Seedless Apple Co., of Toronto, promises to have a large number of Seedless apples at the Ontario Horticultural Exhibition in November. Growers will then be able to ascertain, personally, the merits and demerits of the fruit. As to the productiveness of the trees, their hardiness, early-bearing, longevity and other features necessary in an apple for this climate, that can be determined only by experiment.

We would further advise Canadian growers not to lay too much stress on the testimonials that are printed in the pamphlets sent out to boom the production. The Horticulturist is investigating the source and authenticity of these testimonials. Already we have, in our office, several letters from persons whose names appear in the pamphlets, stating that they do not endorse the apple and were not aware that their names are being used in that way. The Buffalo *Enquirer* says in part: "Did not know they were using our name in any way. Would not advise anyone to inves' money in the enterprise." The New York *Herald:* "Am surprised to hear that our name is being used in connection with the Spencer Seedless apple." Still another: "Have not recommended the Spencer Seedless apple. Never heard of it." A letter sent to New York city has been returned by the postal authorities, addressee not known.

These are some of the things that make the affair look "fishy." While the idea of a seedless apple, valuable also in other respects, is a good one, and one that would revolutionize the apple industry of the world, yet the questions remain: Does the Spencer Seedless apple fill the bill? Is it what it is said to be? Is it adapted to culture in Canada? Is it a new production or simply an old novelty again brought into prominence? Canadian growers will do well to watch and wait.

LABEL EXHIBITION PLANTS

The educational features of the floral department at the Canadian National Exhibition could be greatly strengthened. Flower and plant shows are of little value unless they teach something. They may stimulate a desire for flowers and increase the trade and they may be of benefit in other ways, such as acting as an incentive to cause growers to produce high-grade stock. But above all things, they should be made particularly useful for purposes of instruction.

The Canadian National apparently lost sight of the most important means of accomplishing this end. It did not compel exhibitors, particularly of foliage plants, to correctly name and attach same to the plants by means of labels. The prize-list stated this as a condition of entry, but it was not enforced to the letter. Those that were labelled might as well have been without. The labels were so small and so dirty that, in most cases, it was impossible to read them. Every plant and flower in the building should have been labelled in letters large enough and plain enough for the passer-by to read without coming to a halt. The Canadian Horticulturist heard many persons enquiring the name of this and that plant. Had the names been printed there, the floral exhibition would have accomplished its most important purpose. As it was, the passers-by left the building without learning what they desired to know.

It may be said that labels would interfere with impartial judging. This should not be. In case of the possibility, however, it could be overcome by demanding that the entries be labelled as soon as the awards are announced, which occurs, usually, the first or second day. The value of such a departure to the Exhibition visitor would more than make up for the extra trouble incurred. The cost of the labels, which should be neat and uniform in size and appearance, is a mere bagatelle. The end would justify the expense. There should be something done to strengthen this feature of the Exhibition.

BETTER CARS NEEDED

One of the needs of our large and growing apple trade is a ventilated car that can be used for the fall shipments. For the very early apples ripening in August, and the first two weeks of September, it is not likely that anything will succeed except the refrigerator car. From this time until the fruit has to be protected from frost, a thoroughly ventilated car is much to be desired. The ordinary box car is totally unfitted for this trade. Even when the doors are left partially opened the ventilation is very imperfect. The car is practically a trap for catching and retaining the heat of the sun during the day as well as the heat derived from the natural process of ripening in the apples. There is so little provision for ventilation that the apples are frequently more injured by the railway journey than by any equal period in the transportation.

Recently a car was noted in Ottawa, which was used in connection with the Georgia melon trade, that would be a great improvement. This car had eight openings, four on the bottom and four on the top through the walls of the side of the car, strongly grated with half-inch rods. There were, also, four gratings on each end. As a consequence, when the car was in motion, there was a strong current of air that thoroughly ventilated the car. The advantage of this type of car would be that it could be used for two or two and a half months in the apple trade and then used in the ordinary traffic without change and without endangering any of the ventilating appliances. The elaborate system of ventilation such as the Dominion Express Company is now using in its express cars, would be entirely unsuitable for the apple trade, inasmuch as the apparatus would prevent it being used for other classes of rough freight. This subject should engage the attention of shippers and it is hoped

that they will express their views through THE CANADIAN HORTICULTURIST.

Horticulture is an art. Aside from the pecuniary advantages to be derived from the growing of fruits and flowers, there is an æsthetic aspect that is unquestionable. Horticulture appeals to the highest faculties in human nature. It elevates. The Royal Horticultural Show has done much for England. A Horticultural Exhibition, held annually in Toronto, will do much for the province of Ontario and for Canada. It will stimulate a feeling for something in life better than the humdrum of daily business and care. Most men admire flowers, women love them, and children adore them. They are silent but efficient teachers of the practical value of æsthetics and the benign influence of beauty upon life and character. Flowers will be on exhibition in Massey Hall in November. While the Ontario Horticultural Exhibition is not a new departure, still it is only in its infancy. Much money is necessary to make it a success. Some assistance is needed. Many readers of THE HORTICULTURIST are wealthy, and being friends of horticulture, they may be willing to contribute towards making the exhibition this year the greatest horticultural show ever held in Canada. A little assistance now, when it is needed most, will be the means of placing the show in a position where such will not be needed later on. Already a number of persons in Toronto and elsewhere has made cash donations. Others, who may care to do so, are requested to send their contributions to Mr. J. H. Dunlop, treasurer Ontario Horticultural Exhibition, Toronto.

The fruit exhibits at the Canadian National are about the same in point of size each year. No progress is noticeable. Were it not for the large exhibits shown this year by the Grantham and St. Catharines societies, the display of plate fruit would have been small. A bigger exhibit is necessary. Such will not be made, however, until the prize-list is revised. To encourage fruit growers in exhibiting, a larger prize-list and more money is required. Fruit is perishable. Exhibitors usually show at a loss. Very little fruit is fit for use or sale after the show. For these reasons, growers are backward in exhibiting. Something should be done, and soon, to encourage a larger and better exhibit in this department.

Cooperative experiments with vegetable crops should be conducted by the horticultural department of the Ontario Agricultural College in conjunction with the Experimental Union. A suggestion to this effect is published on another page of this issue, and is a good one. The horticultural department at the O.A.C. should be sufficiently alive to undertake work on these lines, and many more that could and will be suggested in THE CANADIAN HORTICULTURIST, without it being necessary for attention to be drawn to the need.

Again our failing for the good things of life has been taken advantage of. Not long since we were presented, much to our delight, with a basket of peaches, bouncers that fairly dripped with lusciousness. They came from the fruit farm of Mr. G. W. McLelan, of Port Dalhousie, Ont. A contribution of grapes and peaches from "Lakeview," the large fruit and dairy farm of Major F. M. Carpenter, Fruitland, Ont., also surprised us in our sanctum. They were much appreciated, even though they may have been the cause of delaying this issue of our paper.

Now is the time to discuss the work of the new Niagara experiment station. A good suggestion offered now will be worth more than a dozen later. Close attention should be given the details in planning the initial work. Every detail should be so mapped out that radical changes will not have to be made at a later date. THE HORTICULTURIST is of the opinion, for instance, that the planning of the work should not include apples. Variety tests and other experimental work with apples should be left to the sub-stations in other parts of the province, and to the various experimental farms. Apples can be grown in many localities to greater perfection than they can in the Niagara district. Moreover, land in that district is too valuable to make apples a profitable crop. By leaving the work with apples to those stations better adapted for it, more area, time and expense can be given to the tender fruits that are adapted only to the Niagara and similar districts.

The successful sale and transportation of apples depends largely on the placing of consignments in reliable hands and on proper facilities for the ocean carriage of same. Honest buyers and an efficient steamship service are both essential. Such is, we believe, the character of those firms that advertise in THE CANADIAN HORTICULTURIST. Growers and shippers will do well if they consult the advertising columns in this issue.

THE HORTICULTURIST begs to acknowledge the kindness of Mr. Roderick Cameron, of Niagara Falls, Ont., in treating two members of the staff so royally when on recent trips to Victoria Park. Mr. Cameron is one of our most valued contributors. He is a man of wide experience in horticultural matters, and takes great pride in the large and varied collection of plants at Victoria Park, which is equal in beauty to any park on the continent.

Pressure of space has prevented the publication of the third of a series of articles being written by our representative who, earlier in the season, visited Great Britain in the interests of fruit growers and of this paper. It will appear in the November number and will deal with the manner in which Canadian fruit is sold in the Old Country.

Excellent Arrangements

The Ont. Horticultural Exhibition which will be held in Massey Hall, Toronto, Nov. 6-10, should this year far eclipse the two previous exhibitions, owing to the fact that much better arrangements have been made for it, The railway companies have agreed to run excursions at half rates from all parts of the province on Wed. and Thurs., Nov. 7-8. These tickets will be good for return up to Saturday, Nov. 10. By these excursions those who desire to attend the annual conventions of the fruit growers and vegetable growers and Ont. hort. assns. will be able to do so at half rates, and without the trouble of the certificates. Exhibitors and others who desire to attend on earlier days or on Fri. or Sat. will be able to do so on the certificate plan. By buying a certificate from their local agent, they will be able to return free regardless of the number in attendance, but they will have to have their certificates countersigned at the exhibition, for which a charge of 25 cts. will be made by the railway companies. As the railways will advertise these excursions, a large attendance from all parts of the province is expected. It is possible that the railways will add a charge of 25 cts. to each railway ticket for admittance to the horticultural exhibition. Those who purchase a railway ticket will thus have in addition a ticket of admission to the exhibition. Members of the associations, who will be entitled to season tickets for 50 cts., who buy these railway tickets and pay the extra for admission to the exhibition, will be returned the 25 cts. for their admission coupon attached to their railway ticket.

The exhibits in all sections promise to excel last year's splendid showing both in point of quality and number of entries. The number of exhibits of vegetables will be nearly double those of last year. The Toronto school board is arranging that the senior pupils shall attend the exhibition Wed., Thurs., and Fri. mornings between 11 and 12 o'clock. The school teachers of Toronto will be addressed by representatives of the Agricultural College at Guelph, who will have charge of the nature study exhibits at the exhibition. It is possible that the directors of the exhibition will give luncheons each day to prominent people. In addition to all these features, the fact that the famous Black Dike band, whom it is said have secured more prizes for their excellent playing than any other band in the world, will be present each afternoon and evening of the exhibition and will arrange to present specially prepared programs to the enjoyment of all who attend.

The prize-lists are being circulated. Copies may be had upon application to the secretary, Mr. H. B. Cowan, Parliament Bldgs., Toronto.

Vegetable Topics

A most interesting program is being prepared for the annual convention of the Ont. Veg. Grs. Assn. convention to be held in Toronto at the time of the Ontario Horticultural Exhibition in Massey Hall, Nov. 8 and 9. At a meeting of the executive held Sept. 22 at Hamilton, at which Messrs. F. F. Reeves, of Humber Bay; Alex. McMeans, of Guelph, and R. O. Lewis, of Hamilton, were present, it was decided to invite the following gentlemen to speak on the subjects mentioned below: W. A. Emery, of Aldershot, on "Melons"; E. J. Mahoney, of Hamilton, on "Tomato Growing"; John Lewis, of Hamilton, on "Fertilization in Relation to Vegetable Growing"; E. J. Malcolm, of Scotland, on "Onion Growing"; R. Brodie, of Montreal, and E. E. Adams, of Leamington, on "Forcing Early Vegetables"; E. Gibbard, of Todmorden, on "Tomato Growing under Glass"; A. McInnes and T. Benstead, of Strathroy, on "Celery Growing"; and Eugene Davis, of Grand Rapids, Mich., U.S.A., on "Lettuce Forcing and Bean Growing."

It was decided to draw attention to an error in the vegetable prize-list for the exhibition, in section 36, which should read Onions, yellow, best string.

A Duty on Tin Plate

A vigorous protest is being made in the press and by farmers in counties bordering on Lake Ontario against a company that is constructing a big factory in Morrisburg, Dundas Co., for the purpose of manufacturing tin plates for the farmers. The name of the company is the Canadian Tin Plate and Sheet Steel Co., Ltd. It is petitioning the Dominion Government for a protective tariff on tin plate. The farmers of Prince Edward Co. are up in arms. They feel that a duty placed on tin plate, so as to promote the interests of the company, would be disastrous to the dairy and canning industries.

The farmer and the fruit grower use large quantities of tin plate in the utensils and machinery of the farm. The canning industry of Ontario uses millions of tin cans every year. Should this company accomplish its purpose the price of cans would go up, and to counteract it, canners would be forced to pay lower prices for fruit and vegetables. The farmers resent the exaction of such a tribute. The farmer of the west, who use large quantities of canned goods, also will suffer. The establishment of a factory for making tin plate in Canada, under such conditions, will be contrary to the interests of farming community in all its branches.

On Sept. 17, the large fruit warehouse of Titterington Bros., St. Catharines, Ont., was totally destroyed by fire.

In the Niagara dist. there has been a shortage of baskets. This has and is causing considerable anxiety among growers.

A Standstill in Horticulture at the National Exhibition

AT the Canadian National Exhibition, Toronto, products of the field and garden do not receive the attention that they deserve. The facilities for making proper displays, and the meagreness of the prize-list do not encourage large exhibits. The buildings are old, the prize-list is not properly arranged, and not enough money is offered as a recompense for the expense incurred in exhibiting. The perishable character of fruit warrants larger prizes. Very seldom is a basket or plate of fruit of any value after the exhibition. A new building is promised for next year. A new prize-list and more money, also, should be forthcoming.

FRUIT

While the fruit exhibit was not as large as it might have been, the quality of the fruit was better than usual. In varieties, a stronger tendency to grow and uphold the commercial types was evident. The strongest competition was in the commercial classes. The commercial packages showed a great improvement in tiering, in make of box, and in the material used. Practically no boxes were made of poor material. The style of packing, in most instances, was good. In one class, there was an excellent object lesson in packing. The 1st, 2nd and 3rd prize boxes were side by side. The 3rd prize box was 50% better than the 1st prize in regard to fruit, and 100 % better than the 2nd prize box, but it was slack. It is essential that the box be full and packed tight. Slack packing will cause the apples to roll, become bruised, and arrive at their destination in poor shape. Some other boxes were not filled to the top and did not receive the award that quality of the fruit merited. A box of Greenings, good fruit, was packed with the bottom end of the fruit up, and the appearance was spoiled. In commercial packages of pears, some baskets were filled too full, heaped up, and not properly covered and protected. While such may have a place in a nearby, special market, they are not fit for shipment, and, of course, could not compete. Some of the finest Bartletts on exhibition were packed in this manner and were disqualified.

The plate exhibits were fair. Had it not been for the efforts of the St. Catharines and Grantham societies, and the Ont. Fruit Exp. Stations, the size of the display of plates would not have amounted to much. Owing to unfavorable weather during the past season, the number of plates of apples and plums was not great. Pears made a better showing, but, on many plates, there was a lack of uniformity in grading to size. In some instances of 5 varieties on a plate, all pears were of good quality; but 1 or 2 were large and the rest small. The exhibit showed an unevenness that spoiled the effect. Fruit exhibited on plates should be as uniform in size as that demanded in packages for export. Bartletts, Clapps and Duchess were the most numerous. An interesting feature in connection with some of the Bartletts was the fact that the influence of Keiffer pollen was noticeable on some specimens of that variety. Trees from which those particular Bartletts came probably were in close proximity to trees of Keiffer.

The Niagara district sent some good contributions of peaches. Considering the date of the exhibition, the coloring and size were very good. The leading commercial varieties were shown and some others that should have been kept at home. A regrettable feature was the presence of San Jose scale on some of the specimens. Scale was to be seen on peaches that were awarded first prize. Such fruit should have been disqualified altogether, no matter how it compared with competitive plates. The fact that scale was sent to the exhibition is an indication of the seriousness of this trouble in the peach orchards of this province. If growers cannot select a few clean peaches for exhibition out of the many bushels that their orchards produce, the situation is serious.

The Ont. Fruit Exp. Stations made an exhibit of varieties of fruits that are recommended for general planting throughout the province. It was in charge of Mr. P. W. Hodgetts, Sec. F.G.A., Toronto, and was arranged for educational purposes. All kinds of fresh fruits were shown; and cherries, raspberries, strawberries and others were in bottles preserved in antiseptic solutions. A new peach, "Lewis," early, creamy flesh and of fair quality, was shown. A collection of small tools and other materials for use in fruit orchards was also there—pruning knives, saws, spraying nozzles and protectors, strainers, insecticides and so on. Fruit packages, packed and unpacked, helped to make the exhibit an important one.

VEGETABLES

In the vegetable dept. some excellent specimens of garden crops were to be seen. The celery was very good, particularly White Plume and Paris Golden Yellow; but some exhibits were not entered in their right classes—White Plume was shown for Dwarf White, and so on. Beets, carrots and parsnips were very good, the latter scarcely up to average in size owing to dry season; garden turnips were poor, some of them worm eaten. Potatoes, extra good. Winter radish, fair. The date of exhibition was too early to show good cauliflower; cabbage and kale were up to the standard. Citrons were excellent, but some wrongly placed. Tomatoes, fine in quality, large sized, but wrongly named in some instances. The display of onions was the best for years; Brown Bros., of Humber Bay, captured 8 firsts out of 9 entries. The collection of peppers was fair, but would have been more satisfactory had the names been printed on cards and attached to the specimens; each variety in a collection should be limited in number,—as it was, the same variety could be found on different plates distributed over the table. In the class for individual entries of peppers, we think that, in one instance, the award was wrongly placed; the best exhibit was passed by because not quite ripe, but was outstandingly the best in other particulars. Sweet corn, squash, salsify, egg plants and cucumbers, also were good; the latter, however, was wrongly named in one or two cases.

In the class for collections of vegetables, two nice displays were to be seen; many superior individual specimens were shown in both collections. Mr. W. Harris, of Humber Bay, was awarded first prize. There is one thing about these collections to which we desire to direct attention: they were not limited to number of kinds and varieties, and, in some cases, several groups of the same variety were found at different places on the place of display. This makes it difficult for judging. A collection should be limited to say 40 classes or varieties, and each variety should contain no more than 5 specimens. Each class or variety should be correctly named, the names printed on cards attached, and by itself, not scattered promiscuously over the table. THE HORTICULTURIST knows of a case this year where a grower went to the fair grounds with his exhibit correctly named and grouped, as already suggested; and, on seeing the scattered arrangements of the collections then placed, he refused to exhibit. A rearrangement of the conditions of entry for next year should be effected so as to make a reoccurrence of such an incidence improbable.

THE FLORAL DEPARTMENT

The cut flower exhibit this year was almost a failure. The entries were the smallest and the exhibits the most inferior of any in past years. In the plant section some very good specimens were shown. A complete change is required in the floral department. Such is necessary to keep pace with the rapid advances made in other departments of the exhibition. The whole prize-list for flowers and plants needs revising, and some novelties should be introduced to make the floral hall more attractive.

Prize Peaches at Canadian National were Spotted with San Jose Scale

Societies that appoint representatives to the National Ex. Assn. should be careful to select only those men who are in every way competent to fill that important position. How many members in the floral section this year can be accused of having originality? Only one or two. Some new men are wanted.

The erection of a new building for horticultural purposes will eliminate many of the evils that now exist. New features can be introduced that heretofore have not been practicable. Some classes in the prize-list remain to-day in almost the same condition as they were when introduced 20 years ago. Geraniums, fuchsias, summer flowering begonias, and similar classes should be omitted. Many others should be revised.

It would be well, also, to make a change in the foliage group. In their place banks of tuberous begonias, or auratum or rubrum lilies, with ferns, might be introduced. The public is tired of the old-time formal banks. They always know that such are at the exhibition; for, it is the only place where the average citizen can see such an arrangement of plants. Money now given for classes of this nature could be well spent in prizes for the most original floral decoration. Give the exhibitor space to put up a decorated dinner table, a wedding breakfast, a parlor

ornamented for a wedding, an altar decoration, a miniature landscape or even a floral clock. Give the public a change. Plants at present shown in groups could be exhibited in a large conservatory erected in connection with the new buildings.

If not desirable to do away with foliage groups altogether, then have the competition for a cup. As a rule public plants make up these groups. Why should plants belonging to the citizens be exhibited by those who happen to have charge of them and who put the prize money into their private pockets? If this were changed it would lead to a larger number of exhibitors, who now feel the uselessness of exhibiting against city owned plants taking part.

Outside exhibitors have very small chances in competition either in the cut flower or plant sections. In perennials, for instance, small growers cannot compete in dahlias or petunias with the large firms. THE HORTICULTURIST desires to see large firms exhibit; but some arrangement should be made to see that exhibits from persons of less resources would not be in the same class. In ferns, have a class showing the best varieties for house use. Such would give the amateur a chance. Other classes could be added for a similar purpose. A detailed report of the flower and plant exhibits is published in THE CANADIAN FLORIST for September 15.

THE COLLEGE EXHIBIT

The biological department of the O.A.C., Guelph, had a natural history exhibit in charge of Mr. T. D. Jarvis, B.S.A., that was one of the educational features of the exhibition. Mounted or preserved in a suitable manner were the chief injurious insects of the orchard in the various stages of their life history. Among them, fall web-worm (common this year on grapes), codling moth, tussock moth, tent caterpillars, snowy tree cricket (prevalent on raspberry canes) and many others. The work of round-headed borers, fruit bark beetle and others of this type was shown on the host plants. A very troublesome pest in Ontario the past summer, the oyster-shell bark louse, was shown on twigs and fruit; and remedial measures were suggested. In fungi there were exhibited specimens of pear and apple scab, plum rots, crown gall of raspberry, and, among others, the bird's eye rot of grape, which is very bad in some parts of Ontario; at Guelph, not one bunch of grapes unaffected can be found in the grapery.

MISCELLANEOUS NOTES

Demonstrations on proper methods of packing apples in boxes were given by Mr. Stewart of Oregon. Mr. A. McNeill, Chief, Fruit Division, gave a short, practical talk on packing and handling box fruit for market.

In the Manufacturers' Building an exhibit of jams and jellies from the establishment of Mr. E. D. Smith, Winona, attracted considerable attention. A complete line of jams and jellies was shown in 5 and 7 lb. tins, 30 lb. pails and in bottles of various sizes. Preserved whole fruits were put up in pint and quart jars. The exhibit was made in conjunction with W. G. Patrick & Co., of Toronto, who are general agents for the well-known "E.D.S." brand. The exhibit was tastefully arranged and most praiseworthy.

The Biggs Fruit and Produce Co., Burlington, were on hand with the Biggs fruit box and a nice lot of prime apples for export.

The Spencer Seedless Apple Co., of Toronto, had a booth in the Manufacturers' Annex. On another page are comments on the seedless apple, which cometh to Canada in a questionable shape.

The F. G. Terry Co., of Toronto, had an exhibit of Tobique land plaster which is mined and prepared by the Tobique Gypsum Co. of Plaster Rock, N.B. The land plaster was shown in its natural condition and, also, ground fine for use on orchard and garden soils.

The Niagara District Exhibition

IN point of quality and excellence of exhibits, the Niagara District Horticultural Exhibition, held in St. Catharines, Sept. 14-15, surpassed the Canadian National Exhibition at Toronto. The number of entries was not so large, owing to a smaller field to draw from, but the exhibits themselves, individually and collectively, the manner of arrangement and, in fact, the character of the pack in commercial packages showed a marked superiority to similar factors at Toronto. It was a grand show and a credit to St. Catharines and our famous Niagara district. Being the first exhibition of the kind held in St. Catharines, greater things may be expected next year

THE FLORAL DISPLAY

The display of plants and flowers was excellent. In the class for collection of plants by professionals, Mr. R. L. Dunn, of St. Catharines, was awarded first prize. He had the largest display and the plants were exceptionally well grown and clean. Had the display contained a touch of color it would have been almost perfect. Being entirely of green it lacked that brightness of tone that is necessary to a well-finished arrangement. Among the plants in the collection were palms, asparagus sprengerii, ferns, and rubber plants. The second place was taken by Mrs. L. C. Bradt, of St. Catharines, who showed a nice collection. An intermingling of variegated foliage gave it more color and, in that respect, a better appearance than the display that won first. In the collection were, among others, palms, some good rubber plants, and a fine specimen of sago.

The premier place in collection from private greenhouses was won by Mr. S. Richardson, gardener for Mrs. T. R. Merritt, of St. Catharines, with a display of exceptional merit. It included many rare plants, such as Brazilian flax, bird nest ferns, and some choice maiden hair ferns. The second prize was awarded Mr. J. Elliott, gardener for Mr. C. Riordon, of St. Catharines. It also was a good collection of plants, including specimens of palms, ferns, banana, bread fruit and an orange tree in fruit. Another entry in this class was that of Mr. Sangster, of Power Glen, and it was a creditable one. Although the display was smaller than the foregoing, it showed what can be done by an amateur who is enthusiastic.

A display of rare and beautiful plants from Victoria Park, Niagara Falls, selected and arranged by Mr. Roderick Cameron, attracted much attention. It was a grand collection and a tribute to the skill of the man who is making Victoria Park one of the premier beauty spots on the continent. Vases of herbaceous blooms and ornamental grasses, and hanging baskets filled to overflowing with effective plants, were displayed also by Victoria Park.

In collections of asters by school children, the competition was keen. That the young amateurs are enthusiastic in their work of gardening, was evidenced by the extent and good quality of the exhibits. The seed was distributed last spring by the St. Catharines Hort. Soc.; it has been placed in good hands, sown in fertile places and productive of good results. The school children deserve credit for having brought together, in competition, a display of asters that even professionals would find hard to beat.

Among other features of the floral exhibit that deserved particular mention was a collection of six different varieties of Nephrolepsis, or sword fern. In the amateur class for cut flowers were some fine blooms of Hydrangea paniculata, cockscomb, salvia, gladiolus and so on. Some pretty flower baskets were shown and a few nice hand and table bouquets. The decorated dining tables were pretty and tastefully embellished, but they were not up to the standard. Some fair floral designs were shown.

An interesting piece of work was a landscape garden in miniature. It was well prepared and showed the result of considerable work on the part of Mr. Jas. Sangster, of Power Glen. As it illustrated the formal type of gardening, however, it was not in accordance with the modern idea which demands a natural effect. At one end was a model greenhouse, from which to the front were walks, flower beds, lawns, shrubbery, and a few lawn vases and urns placed at regular intervals and laid out with geometrical exactness. While the design was creditable in many ways, we would not advise amateurs to adopt it as a model for laying out the grounds around and about their own homes.

THE FRUIT EXHIBIT

The quality of the fruit, generally speaking, was high grade. The peaches were superior to any that have heretofore been shown in Canada. They were of exceptional merit. The array of grapes on plates and in baskets was a splendid one. In the boxes of apples, pears and peaches ready for shipment, the character of the pack showed a wonderful improvement over past efforts in the district. A few packages were under the standard, however. One box of apples wrapped appeared more like a small load of hay. With this and one or two other exceptions, the exhibit of package fruit was away above the ordinary.

A special prize offered by Mr. M. F. Rittenhouse of Chicago, for best display of fresh fruits grown in the Province of Ont., was awarded Mr. T. G. Bunting, of St. Catharines, who showed an excellent lot of many varieties. The second prize went to S. D. Furminger, St. Catharines. The Ont. Exp. Stations had a creditable exhibit in charge of Mr. L. Woolverton, of Grimsby. The showing of preserved and canned fruit was good; it appeared well and the fruit was excellently put up. The biological dept. of the O.A.C., Guelph, had an interesting exhibit in charge of Mr. T. D. Jarvis, B.S.A. It was similar to the one at the Can. National Exhibition, mention of which appears in another column.

VEGETABLES

The exhibit of vegetables was not a large one, but the quality of the specimens was good. The tomatoes were first class. It is interesting to note that some of the best tomatoes shown came from the immediate neighborhood of the new Niagara exp. sta. The squash, also, was fine. Sweet corn, cauliflower, cabbage, onions, salsify, celery, and all kinds of vegetables were on exhibition, and these vied with the fruit and the flowers in an endeavor to prove that the Niagara district is, as it is claimed, a veritable garden of good and wholesome things.

Baskets Definite in Size

"I want my baskets of grapes to weigh exactly 9 lbs., no more and no less," said Mr. Alex. Glover, Winona, "because it is important to have the basket just full when up to the weight. Otherwise, they will be either slack, or if overfilled, the grapes will be crushed.

"If you put a dozen pickers in a grapery, some of them will make you good weight, while others will put up slack baskets. By having baskets of a definite and correct size, you can make slack pickers fill up, while, at the same time, the others cannot go beyond."

The Kootenay fruit growers have led a movement in B.C. to open the gate, now barred against Chinese, to immigrants intended for fruitfarming.

Horticulture at Central Canada Exhibition

THE horticultural exhibit at the Central Canada Exhibition, Ottawa, was in some respects disappointing, while in other respects it was a fairly creditable one. The display of apples could not have been much more than half what it was last year, due principally to the rather light crop of apples this season in the Ottawa valley. It was apparent, however, that more inducement must be given to exhibitors if a good display of fruit is to be maintained. Prizes—and good prizes at that—should again be offered for the best general collection of apples grown in the Ottawa valley, and for the best general display of fruit. An exhibit of apples packed in boxes for export should also be encouraged, as large quantities of apples are now being grown in the Ottawa valley that could be disposed of by sending to Great Britain or to the west. No apples were shown in boxes at the Central Canada this year.

The apples were not of the best quality, on the whole, but the Duchess, Alexander, and Baxter were good. The last named variety is increasing in popularity, and it is now recommended as one of the few winter apples which can be grown successfully in the Ottawa valley. The prizes for apples nearly all went to local exhibitors, as few from a distance competed.

The pears which were shown were exhibited by Messrs. Wilds and Marshall, of Hamilton, Ont., between whom all the prizes were divided. The plums were also practically all from Hamilton, and exhibited by the same persons. Owing to the early dates at which the fair was held the exhibit of grapes was small, only 13 plates being shown, practically all the first prizes going to Mr. P. G. Keyes, Ottawa, who usually gets the lion's share of the prizes for grapes. The exhibit of vegetables was very fair. This being a favorable season for melons, some good ones were shown. The exhibit of cut flowers was considerably better than that at the Canadian National, the asters being especially good.

In the Central Experimental Farm building there was, we think, a very creditable display of fruit. There were shown of named apples 111 plates, and 31 varieties of seedling apples originated at the C.E.F. There were also exhibited 17 varieties of crab apples, 50 of plums, 17 of grapes, 33 of tomatoes, 36 of sweet corn, and 14 of potatoes. Charts were placed on the wall on which were printed information regarding the best varieties of fruits for the Ottawa valley and the care of the trees. The varieties of apples recommended are: Yellow Transparent, Duchess, Wealthy, Alexander, McIntosh, Fameuse, Wolf River, Milwaukee, Baxter, Scott Winter, Canada Baldwin, and North-Western Greening. Very complimentary remarks were heard in regard to the farm exhibit.

Fruit and Flowers at Western Fair, London

THE Western Fair held at London, Ont., Sept. 7-15, enjoyed the best weather and largest attendance in its history. Some excellent displays of flowers, fruits and vegetables were to be seen. In the floral department there were not as many plants exhibited as usual, but the quality was better than in previous years. While the exhibits of floral designs were hardly up to the usual standard, they were creditable. For funeral design, any size or shape, A. G. Stevens won first prize with an anchor resting on a large bed of white asters. J. Gammage & Sons won second with a society emblem. The third went to T. Mills, who designed a broken column.

The winners in the class for wreath of white flowers are: 1st, Gammage & Sons, 2nd, A. G. Stevens; 3rd, T. Mills. Basket of flowers: 1st, Gammage, with Golden Gate roses; 2nd, Stevens, with American Beauties; and 3rd, Mills, with mixed roses. Hand bouquet, colored: 1st, Stevens; 2nd, Gammage; and 3rd, Mills. Table bouquet: 1st, Gammage; 2nd, Mrs. A. Burns; 3rd, Mills.

There was also a fine showing of gladioli, asters, cockscombs, sweet peas, and so on. Two or three fine collections of dahlias were shown, also several large collections of annuals and perennials.

Some very good specimens of geraniums, and flowering, tuberous and rex begonias were exhibited. A nice collection of 12 varieties of cannas won 1st prize for Gammage & Sons. Mr. Whiting secured 1st for 12 greenhouse and stove plants. Gammage & Sons won 1st prize also in the following classes: collection of 6 varieties of cannas, hanging basket, collection of 25 foliage plants, collection of ferns, specimen palm, specimen fern and general display of plants. Mr. Whiting won 1st on collection of coleus. First place was secured by Mr. Mills, also, on the following: collection of 12 varieties of carnations in pots. Mr. T. Wells won 1st on specimen palm and on collection of 6 varieties of palms.

FRUIT

The fruit exhibits were not large, but the quality was fair. It is to be regretted that fruit growers did not take a greater interest in this department. It may be due to the small remuneration offered in the way of prizes. Some very fine apples were shown, also a large collection of grapes; peaches, plums and pears were scarce.—F.C.

In addition to the foregoing, the following letter was received: "Perhaps the Western Fair may be suitable for the crowds of country people who visit it, but I think it is time that some more attractive features were introduced. Certainly it is difficult to make the present horticultural building very attractive, and I suppose a new building is not amongst the probabilities, but the horticultural committee ought to be able to devise some plan of decoration so that a little less whitewash is visible. Messrs. J. Gammage & Sons' exhibit of horticultural sundries was a move in the right direction, and contributed not a little towards making that end of the building look more furnished. The management still stick to the ancient custom of putting the names of exhibitors on the entry cards in spite of many protests and objections. I have never yet been able to get a satisfactory explanation of their objection to numbers."—E.

Cold Storage

That cold storage facilities for our apples are urgently in demand, may be seen at some country points where apples barrelled up one day, have to wait for several days at the station or in the orchard before being shipped. The wait of a few days, in the hot, dry sun, works all the difference between success and failure with markets. And the dealers are not the only losers. A poor sample of apples discounts Canadian fruit in the Old Country markets. It is a poor advertisement for Canadian goods.

Railroad companies are somewhat to blame in not furnishing cars at shorter notice, and the dealers are to be censured who neglect to order refrigerator cars and secure the Dominion government bonus of icing privileges. In some country points we have seen apples being shipped in hog and cattle cars, landed by the railways at stations in a most unfit condition. How long will the fruit growers and farmers of Ontario pay bonuses and subsidies to roads which quietly give them the go-by?—Toronto *World.*

The Show at Woodstock

The Woodstock Hort. Society's annual flower show was held late in August. As usual, some fine gladioli were shown by Mr. R. W. Woodroofe and others. Dickerson, the florist, had a large exhibit of palms and ferns, good healthy commercial stuff.

A large variety of seedling coleus was shown by Mr. Jas. Scarfe, and "Alladore" sent the usual collection of stove and greenhouse plants, including a *Musa Cavendishi* in fruit as a drawing card. The crowd turned out well and the secretary reports a balance of $23. A piano was kept on the go all the time, and made things pleasantly lively.—E.

Galt Flower Show

The Galt Hort. Soc. held its annual flower show on Sept. 6. Whilst the number of entries was not so large as in former years, the quality of the exhibits was fully up to the usual standard, in some instances exceeding it.

The show was held in the market building, and was very attractively set up, but the attendance was poor. The management has tried all kinds of things "on the side" in order to draw the public, without success, but this time had simply nothing else. Some music is an actual necessity at a flower show, if it is only a lone piano.

The No. 1 Grade

Some growers are laboring under the opinion that the wording of the clause that deals with the grade for No. 1 apples in the Fruit Marks Act has been changed. This is not so. There is practically no change in the No. 1 grade. It will be stiffened, however, to the extent of not permitting any apples that are near the margin of the No. 2 grade being passed as No. 1 apples. Before a No. 2 was defined, the inspectors occasionally permitted doubtful apples to pass as No. 1. Now that will not be the case. All doubtful apples must be packed as No. 2. By "doubtful" is meant those that are on the margin between No. 1 and No. 2.

In the 10% of defective specimens that are allowed, marked defects are not included. The 10% is allowed simply for the mistakes incurred in the hurry of packing. Defective specimens that are yet marketable go as No. 2. You will see, therefore, that the No. 1 grade this year will not be different to the system of packing practised by the best packers last year.

The new warehouses which are being remodelled for the Allan Steamship Co. at Surrey Dock, London, will, when completed, be equal to any in Great Britain for the accommodation of fruit. Special attention is being given to the fitting up of the apple storage sections so that they may meet the requirements of Canadian shippers.

A copy of Simmers' annual autumn catalog of bulbs, plants, seeds, etc., 1906, has been received by THE HORTICULTURIST. It contains a list of everything in that line required by florists and gardeners. Many cultural notes make it doubly interesting and valuable. A copy may be had by writing J. A. Simmers, Toronto.

Subscribe now and get The Horticulturist for almost nothing.

The Provincial Grants to Horticultural Societies

THE accompanying table, that has been prepared by Mr. H. B. Cowan, supt. of hort'l societies for Ont., shows how the various hort'l societies in the province would have been affected by the new act governing hort'l societies had they received their grants this year on the same basis as they will receive their grants next year. In the past the societies have received practically fixed grants each year irrespective of the value of the work they were doing. Societies where there were only a few in a county received larger grants than societies did where there were a number in a county. Under the new act the grant of $8,000 (which is $1,500 larger than the former grant, owing to an anticipated increase in the number of societies) will be distributed on the following basis: $2,400 will be distributed among the societies in proportion to their total number of members during the preceding year; $4,800 in proportion to the total amount expended by each society during the preceding year for horticultural purposes, and an extra grant of $800 among the four city societies of London, Hamilton, Toronto, and Ottawa, in proportion to their number of members during the current year.

This year the societies will receive their grants on the same basis as usual. The accompanying table has been prepared to give the societies an idea of how their grants next year are likely to be affected by the new act.

It will be noticed that only a few societies will suffer any decrease in their grants. Most of these societies have received unusually large grants in the past. The great majority of societies will receive nice increases in their grants, while in the case of several societies their grants will be doubled.

The special grant to city societies, which have a total membership in 1906 of 672, is divided as follows: Ottawa, membership 267, proportion of $800 grant, $318; London, membership 160, proportion of $800 grant, $190; Toronto, membership 115, proportion of $800 grant, $137; Hamilton, membership 130, proportion of $800 grant, $155.

Society	Av. Grant 1903-4-5	Av. Expen. 1903-4-5	Membership '05	Total Grant	Increase	Decrease
Brantford	$ 138.30	$ 132.00	52	$ 72.00	....	$66.00
Walkerton	85.30	200.00	92	113.00	28.00	....
Millbrook	68.60	113.00	54	65.00	....	3.00
Port Hope	92.60	195.00	93	112.00	20.00	....
Bowmanville	82.30	160.00	89	96.00	14.00	....
Port Elgin	42.60	106.00	55	62.00	20.00	....
Tara	32.00	95.00	58	59.00	27.00	....
Kincardine	61.60	209.00	133	132.00	71.00	....
Paisley	48.00	164.00	101	103.00	55.00	....
Chesley	63.30	178.00	142	122.00	59.00	....
Orangeville	119.60	196.00	107	117.00	....	2.00
Aylmer	74.60	296.00	206	193.00	119.00	....
Springfield	62.60	32.00	137	63.00	1.00	....
Windsor	105.00	419.00	145	220.00	115.00	....
Cardinal	140.00	197.00	73	105.00	....	35.00
Thornbury	31.60	85.00	55	54.00	23.00	....
Owen Sound	37.60	97.00	83	68.00	31.00	....
Durham	59.30	154.00	72	88.00	29.00	....
Cayuga	104.00	185.00	104	112.00	8.00	....
Clinton	78.00	172.00	86	100.00	22.00	....
Goderich	78.60	236.00	74	121.00	43.00	....
Seaforth	61.00	199.00	116	122.00	61.00	....
Lanark	81.30	201.00	104	118.00	37.00	....
Oakville	59.30	99.00	99	76.00	17.00	....
Stirling	76.30	112.00	52	64.00	....	12.00
Deseronto	100.00	91.00	51	54.00	....	46.00
Belleville	140.00	236.00	52	113.00	....	27.00
Perth	125.30	240.00	117	138.00	15.00	....
Smith's Falls	99.30	233.00	125	138.00	39.00	....
Napanee	140.00	130.00	52	71.00	....	69.00
Grimsby	44.60	102.00	76	68.00	24.00	....
St. Catharines	45.60	229.00	191	161.00	116.00	....
Strathroy	84.60	225.00	140	141.00	57.00	....
Simcoe	68.60	108.00	72	69.00	1.00	....
Port Dover	61.00	119.00	59	69.00	8.00	....
Cobourg	140.00	184.00	87	105.00	....	35.00
Tillsonburg	48.30	138.00	65	79.00	31.00	....
Woodstock	61.00	168.00	107	106.00	45.00	....
Brampton	123.60	172.00	96	104.00	....	19.00
Mitchell	60.60	166.00	124	111.00	51.00	....
Stratford	93.60	162.00	125	110.00	17.00	....
Peterboro and Ashburnham	115.00	189.00	108	115.00	....	....
Picton	78.30	103.00	82	71.00	....	7.00
Renfrew	140.00	263.00	93	139.00	....	1.00
Midland	52.00	117.00	69	72.00	20.00	....
Orillia	60.30	163.00	77	93.00	33.00	....
Barrie	71.00	201.00	112	121.00	50.00	....
Collingwood	71.30	211.00	140	135.00	64.00	....
Lindsay	73.30	148.00	110	99.00	26.00	....
Elmira	50.60	100.00	69	65.00	15.00	....
Waterloo	123.30	246.00	152	153.00	30.00	....
Galt	91.00	175.00	127	116.00	25.00	....
Hespeler	70.30	116.00	74	73.00	3.00	....
Preston	102.00	149.00	125	105.00	3.00	....
Niagara Falls	52.30	77.00	55	51.00	....	1.00
Elora and Salem	41.60	58.00	54	43.00	2.00	....
Fergus	42.30	83.00	66	57.00	15.00	....
Clifford	75.30	351.00	135	189.00	114.00	....
Newmarket	61.30	135.00	85	85.00	24.00	....
Hamilton	350.00	600.00	130	287.00 155.00	92.00	....
Kingston	140.00	354.00	191	211.00	71.00	....
Ottawa	350.00	491.00	248	286.00 318.00	254.00	....
London	140.00	152.00	120	104.00 190.00	154.00	....
Toronto	140.00	342.00	134	186.00 137.00	183.00	....
Guelph	105.30	233.00	145	146.00	41.00	....
	$5,916.00	$11,992.00	6,622	$7,196.00		

Ontario Horticultural Association

A deputation composed of Messrs. W. B. Burgoyne, of Hamilton, pres. Ont. Hort. Assn.; Maj. H. J. Snelgrove, of Cobourg, v.-pres. of the same assn, and H. B. Cowan, sup. of horticultural societies for Ont., and sec. of the assn., waited on Hon. Nelson Monteith, Minister of Agri. for Ont., Sept. 5, and asked that the proceedings of the annual convention of the assn. should be printed and distributed among the members of the hort. societies of the province. They asked, also, that a grant of $100 to the provincial assn. be made to assist in defraying the expenses of bringing speakers to the conventions. The members of the deputation explained that the horticultural societies in the province are not sufficiently numerous or wealthy to be able to defray these expenses. They pointed out that it is desirable that there should be a provincial organization to furnish an opportunity for the societies to compare notes and discuss methods of work which they have found to be successful. In this way new lines of work can be made known and the societies strengthened. The Ont. Assn. would like to bring well-known speakers, such as Mr. J. Horace McFarland, president of the American Civic Improvement Assn., and others to its conventions, that it may be kept in touch with work being done on behalf of horticultural improvement in the U.S.

Hon. Mr. Monteith, in replying to the deputation, stated that he was deeply interested in the work being done by the hortl. socicties of the province. He realized that there is another side of life beside that of making money, and believed that the hortl. societies minister to that side. He had always felt that the organization launched some years ago in favor of civic improvement would not succeed as the work it proposed to accomplish belonged properly to the hortl. societies. He promised careful consideration of the requests made by the deputation, and intimated that he considered their requests reasonable.

The Brantford Hort. Soc. held its annual flower show on the evening of Sept. 14. It was a decided success in every way; the number of exhibits was large and the quality well above the average. Mr. Wm. Hunt, of the O.A.C., Guelph, delivered a most instructive and interesting address, and complimented the society on the marked improvement of this year's show over that of previous years.

Notes from British Columbia

C. P. Metcalfe, Hammond

The plum shipments are over and have been fairly profitable for the growers. If losses occurred it was from lack of knowledge of the market. Growers ship too much to the large centres, and as a result the prices are seriously affected. It is not a question of a limit to the market in the north-west provinces, but the lack of proper distribution. The quality of the fruit this year has been superior, owing to favorable climatic conditions. It is a matter of observation that orchards which have never been sprayed or much attention given to them have produced a greater proportion of clean fruit. A notable feature this year has been the second bloom and crop of strawberries and blackberries; especially Senator Dunlop and Magoon in strawberries, and Lawton in blackberries. Drought seriously shortened the first crop of cane blackberries, and later the fall rains developed a second crop.

Exhibitions are in full swing just now. Smaller points as well as the larger are holding their shows. I think it a mistake the multiplication of so many small shows, all drawing their government appropriation, in this province, which could be spent to better advantage in the cooperation of the people in the making of municipal or district exhibits at the larger exhibitions. The test or success of a show is not in the amount of its gate receipts, but in the impetus given to the development of the various industries in the districts.

The provincial government is purchasing and forwarding fruit for an exhibit from B.C., to be shown at the exhibition of colonial fruits, to be held under the auspices of the Royal Horticultural Society at Vincent Square, London, in Dec. next. Last year the B.C. exhibit of fruit carried off the gold medal against all exhibitors.

Prince Edward Island Letter

Rev. Father Burke

It is now painfully evident that the fair promise of an abundant apple crop in spring was nothing short of an *ignis fatuus*. There will be a very short crop; and short, too, in the late varieties, which we can least afford to do without. There was an abundance of bloom—one seldom saw such a display—but the fixing was exceedingly light; and even the light early crop was cut in two twice by falling fruit in the first stages, and by the defects due to prevalence of insects. Spies will be very scarce, so will Ben Davis, which never before failed to give us a pretty generous return. There are fair returns from the earlies—the Transparents, Duchess and Astrachan, but even those have fallen to only a medium crop, even where well looked after, because of the drought.

There is a difference of opinion as to what has caused the failure after the flower promise of spring. We thought it was the cold, wet, dark weather that influenced the late varieties here. East, though, which has a difference of a week or 10 days, had fair weather for pollen distribution, and we are assured by our secty. of the F.G.A., Mr. Dewar, a close observer, that this could not have affected them. He said: "We had too much bloom. It completely covered the trees, and I think exhausted their vitality to fix." Be this as it may, this will be a very slack apple year with us.

We have just been to Charlottetown to hold conference with Com. Ruddick on fruit interests. He had come from N.S., having gone to Evangeline land to consult with the fruit men there. He informed us that the show of fruit was anything but abundant in N.S. Maritime Canada is likely to have a short crop generally.

We had pleasure in Mr. Ruddick's visit, officially, for he has undertaken to straighten out many things long in demand among us. We are to have a permanent inspector-instructor like the rest of the world, and the "Personal Visitation Campaign," long advocated by us, and only put into operation in fits and starts, will be now formally undertaken. Then, we are to have the packing demonstrations by western experts which last year, under Mr. Boies, opened the eyes of eastern fruitmen. We have further assurances that the recommendations of last March's conference at Ottawa will be carried out. The barrel decision will go to Parliament next session and be made law; the box-package legislation, not so definite, will receive attention; the formation of national work in publications will be assumed, and much close attention given transportation problems.

Those power-sprayers, the Commissioner thinks, are not giving the satisfaction necessary to their continuance—they are not, he thinks, suitable to maritime conditions; and, therefore, we have little hope of a proximate favorable solution of the disagreeable spraying business. Next year all will certainly have to spray like demons, or with all these insect pests, old and new, fostered by the exceptional season, we will be ruined. Make up your mind to that. We are glad Com. Ruddick came to talk over matters with us, and believe good results will accrue, from such conference, to the fruit interests of the maritime provinces.

Apple Prices Good

The Ontario Cooperative Fruit Growers' Association held a meeting in Toronto recently, with the president, A. E. Sherrington, of Walkerton, in the chair. Comparison of reports showed that there would be no difficulty about selling apples this year. Indications pointed towards good prices. The apples grown by the affiliated associations are particularly good in quality, scab and insect injury being less noticeable than for many years. Packing in central packing houses, under the supervision of experts, will ensure a uniform high-class "pack." The fruit division at Ottawa has promised to have the fruit of the association specially inspected and protected.

The association does not intend to be in a hurry to sell winter apples. A number of buyers have written from the Old Country expressing their intention of coming to Canada to buy. This and the fact that Canadian buyers are anxious to secure fruit that is packed by the cooperative plan, will have the effect of materially stiffening prices. It is proposed soon to change the name of the association, as the present name is confused by the public with that of the Ontario Fruit Growers' Association, which is an educational organization, not commercial.

Export of Apples

"We read and hear on all sides reports of apples arriving during the past winter in the old country in bad condition," said R. C. Fowler, of Burlington. "These reports usually lay the blame on the packer which, in my opinion, is not always fair. I can cite definite cases in my own experience, and in the case of many others, where the fault lay not with the man who put up the goods, but with the railway that first took delivery—and in our case with the G.T.R.

"Seldom, if ever, are the railway facilities for carrying apples what they should be. More than once during the past season I was forced to place apples in cars that were like ovens. The apples had to go, and I had to take whatever cars were offered me. It is not surprising that apples arrive at their destination in bad condition, when they start in cars poorly ventilated, and hot enough to roast them. It seems that the fruit grower must suffer for carelessness and negligence on the part of the railways."

A well-prepared and well-illustrated catalog of bulbs and seeds is that recently sent out for the fall of 1906 by Arthur T. Boddington, seedsman, New York City. In it the bulbs are divided into 2 sections, bulbs for planting out of doors and bulbs for growing inside. This arrangement avoids confusion and will be met with the approval of amateur and professional alike. Send for a copy.

It is an open question with many growers whether the introduction of Japanese plums has after all been very beneficial to the trade generally, from the fact that it is believed that the San Jose scale was brought into this country at the same time, and also, from their great productiveness and somewhat indifferent quality, they have to some extent destroyed the market for the better class of European and American plums.—W. H. Bunting, St. Catharines.

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Fruit Crop Conditions and Prices

INDICATIONS are favorable for good prices for winter apples. While the crop will not be as large as was estimated earlier in the season, it will be a fair average. In Ont. the quality will be the best in years. Other provinces also report good quality except N.S., where, though not poor, it will be under normal.

Large quantities of Canadian apples will be exported. The present indications are that Europe will use more Canadian apples than ever before. A large part of the English apple crop is being marketed now. It has come slightly in competition with Canadian fall apples, but the situation for winter varieties is promising. Good prices on the other side may be expected and, of course, the larger our exports the more will be realized for those used at home.

SOMETHING ABOUT PRICES

THE HORTICULTURIST knows of various sales that have been made at good prices. While buyers are talking of "record apple yields" and prospective low prices, yet they are anxious to buy. In one locality $3 a bbl. has been offered for No. 1 and $2.50 for No. 2, clean, well-packed stock. This price is above the average, but there is no reason why growers should not receive such for fruit that is high grade and well packed. Some orchards have been sold for $1.25 a bbl., picked. Several others, east of Toronto, last week, were sold at $2 a bbl., tree run; seller to furnish barrel, pick, pack and deliver at station. Also 2,000 bbls. tree run, at $2.25, packed. Growers who put up good fruit, uniformly packed, need not fear low prices. We would advise growers to hold No. 1 winter apples for $3; but they must be so selected and so packed that they will be a credit, not only to the grower but also to Canada.

THE UNITED STATES CROP

Owing to continued dry and hot weather, the western fruit crop is ripening too early and falling off the trees. The Michigan crop will be heavy. In western New York the crop will be 50% greater than last year, while in the Hudson River district it will be only ½ of last year's. It is said that growers are having some trouble in arranging for storage. Prices have advanced in New York state. Some difficulty is found in the matter of securing help for harvest. Should this prove serious, it will tend to lessen the amount of fruit available for export.

Harry Dempsey

Among the prominent and enterprising fruit growers of Prince Edward Co., Ont., is Mr. Harry Dempsey, of Rednersville. This year he won many prizes at the Canadian National Exhibition and each year for 9 years in succession he won 1st prize for 40 varities of apples.

OTHER FRUITS IN ONTARIO

Hot weather has hastened the maturity of peaches in the Niagara district, but the crop is a good average, of fair quality. A dearth of baskets has made the situation rather serious for the grower, but has kept up the price. Grapes are a fair crop, but owing to lack of rain, rather small; not much rot. Pears have not yielded as well as was expected early in the season; but the crop has been fairly good and clean, although slightly undersized. The crop correspondents of THE HORTICULTURIST point out the situation in the various localities as follows:

DURHAM COUNTY

Newcastle.—The apple crop has been injured by hail. Duchess apples, good crop and color; Wealthys, heavy crop but many small and poor color; Colverts, good size and color; Jennetting, the same; Alexanders, about a carload here, fairly good; Ben Davis, good color and heavy crop, but slightly undersized; Baldwins and Spys, good; Greenings have fallen badly, otherwise good; Blenheim Pippins are extra heavy and good sized; Stark, off year with most trees, but good size and color; Kings, off

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year; Cranberry Pippin, good. Plums, none; pears, about ½ crop.—Henry C. Bowen.

PEEL COUNTY

Clarkson.—Winter apples are dropping badly; should strong winds prevail soon, good hand-picked apples will be scarce. The continued dry weather is telling against them. No plums; pears, fair crop; crab apples, plentiful. Strawberries planted in spring promise well; the old patches are looking well. Raspberries have caned up well and look healthy; the fall web worm is very prevalent.—W. G. Horne.

WENTWORTH COUNTY

Winona.—Peaches better than was expected; severe drought somewhat affected them, and late ones will be small. Pears, mostly picked, except Keiffers, and are in good demand; Keiffers will be small if drought continues. Grapes are ripening well, and promise a fair crop of good quality; very little rot. Plums, almost gone, except a few Reine Claude, which are in great demand. Plums and peaches are shipping well. Apples, clean of scab, but not the crop expected; dropped a good deal during the hot, dry weather.—J. P. Bridgman.

LINCOLN COUNTY

Grimsby.—Plums, a light crop, many varieties not yielding any fruit. Peaches, a good crop, Early Crawfords a little light. Pears, a good crop, smooth and clean, free from scab and knots. Grapes, light and not well bunched.

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Apples, a light crop, and injured by codling moth. The quantity for export will be lessened.—A. H. Pettit.

ST. CATHARINES DISTRICT

Hot weather has tended to rush peaches and grapes along; most peaches are gathered, while grapes are about half picked. There exists a basket famine; it is feared that there will not be enough to harvest the grape crop. Several carloads have been secured and brought in from the states. There may have to be a lot put in bbls. for the wineries. The scarcity in baskets has tended to stiffen prices, but, as in other years, large quantities have been cut while still partly ripened, and shipped; it is true, realizing better prices than later, but helping to create a prejudice against grapes and to lower prices and lessen consumption. One marked feature of the season is the large quantities sold outright and less going on commission.—R. Thompson.

NORFOLK COUNTY

Simcoe.—A bad hailstorm early in the season did considerable damage. Most apples will pack, no scab and few worms. Prices are from $1.75 to $2 aboard cars.—W. Olds.

KENT COUNTY

Chatham.—Plums, almost a total failure, especially the Japanese. Grapes, fine sample and good crop. Pears, poor quality and a light yield. Although with orchards that have been trimmed, sprayed and properly cultivated, the size and quality are fine. Peaches a fine crop, except such as the Alexander, Triumph, and Crosby. Early and fall apples, a good crop. Snows are great; Baldwins in young orchards are about a failure; Spys are a good crop of grand quality; Greenings are a fair crop, and where sprayed are very fine. All young orchards are bearing a small crop. Back from Chatham and the river apples, pears and peaches are nearly a failure.—Milton Backus.

GREY COUNTY

Craighurst.—No plums; pears, almost a total failure. Good crop of fall apples of good quality; not very large, but clean and well colored. Winter apples, far below average in quantity, but good in quality. Orchards need rain.—G. C. Caxton.

Meaford.—Apples are looking well, and are of good quality. Rain is badly needed. Spys are fine and clean; Baldwins are looking well, and will be an average crop; Ben Davis are beautiful, and will be a full crop; Manns look well and will be an average crop.—J. D. Hamill.

Clarksburg.—Apple prospects are good; good crop and clean fruit, though somewhat small. Crab apples, a light crop; plums, a complete failure; pears, an average crop.—John Veitch.

MONTREAL DISTRICT

Westmount.—Apples have dropped badly on account of severe drought and extreme heat. Codling moth has been pretty bad, especially on the Wealthys. Fameuse, medium crop, clean and free from spot; $3.50 per bbl. is offered for No. 1. Now that summer and early apples are over, prices are looking up.

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Alexanders are hard to sell on Montreal market; better for export.—R. Brodie.

NEW BRUNSWICK

Lower Queensbury.—Yellow Transparent and Duchess apples were an extra good crop. Wealthys are hanging on the trees remarkably well; they are well colored and of a good size, comparatively free from scab and worms. Fameuse, small and somewhat affected with scab. Alexander, very highly colored and good size. Gano, medium crop, good size and highly colored. Other winter apples are a very light crop. High bush cranberries were an abundant crop.—John Ferguson.

As a producer of prize fruit, Mr. W. M. Robson, of Lindsay, Ont., competed most successfully at the National Exhibition against the famous Niag. Dist. Mr. Robson's Green Mountain variety won the 1st prize for white grapes. He stood 2nd for Martha crab apples, 3rd for McIntosh Red apples, 3rd for red apples of any other variety, and 3rd for white or green apples. Considering the standard of his competitors, Mr. Robson's success was most creditable. His grapes were particularly admired.

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Vegetable Crops Below Average in Yield

THE vegetable crops of Ont. have suffered from drought. While occasional showers fell during the month in some localities, they did not improve the situation to any marked extent. Reports from the crop correspondents of the Ont. Veg. Grs. Assn. indicate that the condition of the crops on the whole is much below the standard. Most vegetables have not reached their normal size; maturity has been hastened. Tomatoes ripened too rapidly; they are about done; the crop has been only fair.

The behaviour of celery has varied in the different districts; some report a good crop; others, a failure; on the whole, the late crop will be under average in yield but of fair quality. Drought and aphids have injured cauliflower and cabbage; the crop is poor. Late melons are excellent in yield and quality. Sweet corn is under average. Squash and pumpkins have turned out well; cucumbers poor. Fall spinach is scarce.

Onions, as predicted last month, have turned out only half a crop, of good quality but slightly under size. Beets, parsnips, carrots and turnips are below the estimate; they are yielding less than normal. Potatoes are reported to be less than half a crop, slightly above in a few localities and a failure in others. The detailed reports are as follows:

MONTREAL DISTRICT

Lachine.—Owing to very dry season crops are poor. Onions, very small and only half a crop. Tomatoes, fairly good quality, but small in size. Celery, clean, but of small size. Sweet corn, only half a crop. Potatoes, less than half a crop; no disease. Early cauliflowers very good; late ones only medium. Beets and carrots are very good and very clean; parsnips, poor crop and small. Lettuce, except in frames, is poor. Late cabbage, heading fairly well but small. Squash and vegetable marrows are very good; cucumbers, fair. Leeks are small and of poor quality. Prices of vegetables are higher than was ever known in Montreal markets.—Charles A. Smith.

OTTAWA DISTRICT

Crops have suffered greatly from drought. Melons not a heavy crop but good quality. Early celery is good; winter crop small size but any amount of it. Carrots, fair; parsnips, good. Onions, heavier crop than expected. Pumpkins, citrons, etc., are coming in heavy and lots of them. Tomatoes, good crop. Swede turnips are scarce at present; potatoes are good. Red peppers are a glut; pickling cucumbers, small. Cauliflower, a heavy crop but a little dark. Cabbages are short at present; winter cabbage will be a fair crop but rather soft.—T. R. Mockett.

FRONTENAC COUNTY

Kingston.—We are suffering from protracted drought. Late roots, where not complete failures, are very small. Late cabbage, many not heading; turnips, many seen without bulbs. In low situations, celery is better than expected; where water was used plants look healthy. Tomatoes were a good crop.—Chas. F. Adair, Cataraqui.

LENNOX AND ADDINGTON

Napanee.—Potatoes are not rotting as bad as was expected. Onions are a short crop and are selling (good samples) at $1 a bush. Tomatoes are about done and have been rather a heavy crop; cabbage, a short crop and poor sample. Cauliflowers, fairly good, likewise, most other vegetables.—E. M. Sherman.

TORONTO DISTRICT

Humber Bay.—Weather continues dry. Cabbage and cauliflower are making poor growth; unless rain comes soon many patches will be destroyed. The celery crop is doing well, much better than last year. Late potatoes are almost a failure. Tomatoes have been a fair crop. The onion crop has ripened early; it is of a good quality but rather undersized. Squash, citrons, marrows and melons are abundant crops. Prices on Sept. 22 are as follows: carrots, 40c. bush.; parsnips, 50c. a bush.; onions, in large quantity, 1c. a lb.; cabbage are still low, about $2 a 100; marrows, 20c. to 40c. a doz.; squash, Hubbard, 75c. to $1 a doz.; lettuce, 15c. to 20c. a doz.; radishes, 15c. a doz.; rhubarb is in good demand, 20c. a doz.; cauliflower, 50c. to $1.50 a doz.—J. W. Rush.

Doncaster.—All crops are not doing well on account of dry, hot weather. Cauliflowers have been very poor, but doing better now. Cabbage, parsnips and carrots are very good. Tomatoes have done far better than was expected. Onions are not good, only about half a crop.—C. Gibbard.

Bracondale.—Root crops are rather below the average; onions also. Dry, hot weather and blight has almost ruined the celery. Cauliflowers are poor and suffering greatly from want of rain. Winter cabbages are fairly good, but little planted. Very little late spinach has shown itself.—A. W. Shuter.

PEEL COUNTY

Clarkson.—The potato crop is a good one. Onions are good on the heavier land, though small on the light soil. Root crops are looking

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fairly well. Late melons and tomatoes good crop.—W. G. Horne.

HALTON COUNTY

Burlington—The late tomato crop is a fair average, though ripened too rapidly. Onions, good harvest and fair prices; celery, very disappointing. Cauliflower and cabbage are a fair crop with good prices. Late potatoes half a crop, of poor quality.—J. A. Lindley.

ST. CATHARINES DISTRICT

Drought and continued heat have largely stopped growth in vegetable crops and caused premature ripening. Onions are small but cured in fine shape. Tomatoes only 50% of a crop, but well ripened; potatoes will be only half of a crop; good quality though somewhat small. Sweet corn for factory use about two-thirds of a crop.—Robt. Thompson.

WELLAND COUNTY

Niagara Falls South.—Melons have broken all crop records for both quality and quantity. The same of egg plant, peppers, squash, cucumbers and some patches of tomatoes. Sweet corn, quality good, yield about two-thirds crop. Late tomatoes, crop from one-fifth to two-fifths, quality poor, small sized; pack short by 40%. Onions, quality good though bulbs undersized. Late potatoes won't average two-fifths of a crop. Cabbage, cauliflowers and Swede turnips are badly infested with cabbage aphis, most plantings being entirely ruined. Celery, poor; carrots, beets and parsnips, about half a crop. Fall spinach scarce.—Thos. R. Stokes.

BRANT COUNTY

Scotland.—Onions are nearly all pulled and a number of cars shipped. The yield is a little below the last estimate. Owing to continued dry weather, the crop is in fine condition for shipping.—E. G. Malcolm.

KENT COUNTY

Chatham.—Dry weather has seriously affected the crops. Celery will be very scarce. Potatoes are poor; tomatoes very plentiful and of good quality. Melons have been a good crop with big demand. Cucumbers failed; onions for pickles, a great crop owing to the absence of maggots. The onion crop has been good. Cauliflowers are a complete failure owing to dry weather and rot.—Fred. Collins.

ESSEX COUNTY

Leamington.—Owing to severe drought and very hot weather, crops have suffered severely. Tomatoes ripened up quickly, and are now almost off the market. Potatoes will be the shortest crop for years. Onions are a fair crop. Carrots, beets and other root crops will be light, except on some low lands. Cabbage, not much grown; cauliflowers, large but not of good color. Melons are a fine crop. Cucumbers have all been dried out for want of rain. Celery, on low land is fine. —E. E. Adams.

LAMBTON COUNTY

Sarnia.—Vegetation is at a standstill owing to drought. We have had no rain since Aug. 26. The growing season is over for potatoes, onions, corn, etc.; but tomatoes, late cabbages, cauliflowers, celery, carrots, beets and parsnips have not matured yet and need moisture. The crops will be as follows: late potatoes, about 50% of an average crop; cabbage, onions, tomatoes, carrots, beets, parsnips, under an average crop; celery and turnips poor.—W. A. Broughton.

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Mr. E. G. Malcolm

Various Exhibitions

The annual exhibition at St. John, N.B., was held in the early part of Sept. The date was too early for a good display of fruit; but the exhibits showed well for the season, especially with the earlier varieties. N.S. was not fully represented. In competition with her sister province, however, in single entries, she held her own; if any difference existed, N.S. was perhaps superior. Many counties of N.B. had a very creditable display. The floral exhibit this year was, perhaps, superior to anything ever seen in St. John. Both the plants and cut flowers were very fine, and the exhibits were most tastefully arranged.

On Sept. 8, the Montreal Hort. Soc. opened the new Royal Scots Armory with their annual exhibition. The display was most complete, embracing almost every specimen of flower, fruit and vegetable grown at the season. A large number of classes were open, and the number of entries was ample. Much satisfaction was expressed over the success of the show, and the advantages of the new armory where it was held.

Early in Sept. a lawn and garden competition was held by the St. Thomas Hort. Soc. Many entries were received, and prizes of 5, 3 and 2 dollars were given. A class will be made next year to permit the competition of caretakers of public grounds and of private properties. A good idea is the liberty given prize-winners to invest part of their prize money in bulbs to grow for next year's competition. By so doing, they can obtain the very best stock at wholesale prices.

The Quebec Pomological Society held a very interesting summer meeting at Chateauguay Basin. Among the addresses delivered was one by Mr. W. T. Macoun, Ottawa, which will be published soon in THE HORTICULTURIST.

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Virginia offers fine opportunities to the farmer and investor. Climate is mild and healthful, soil is fertile, and grows all crops and fruits; near the great markets. Land is selling below its value, but increasing in price every year. Many Canadians are living in Virginia. The State Department of Agriculture gives any information. Address G. W. KOINER, Commissioner of Agriculture, RICHMOND, VA.

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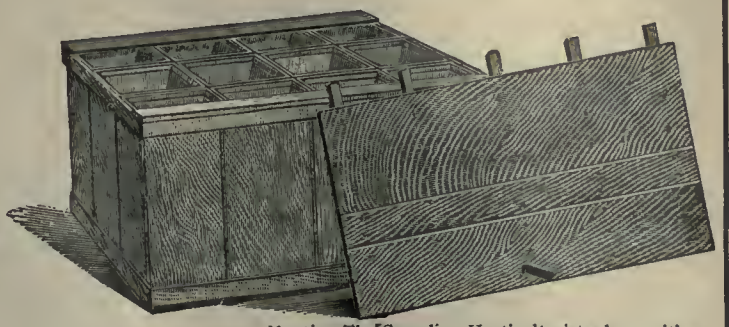

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Items of Interest

Mr. F. L. Dery, D.F.I. at Montreal, reports the sale of over 2,000 bbls. of apples on Sept. 14, for domestic use in Montreal.

Mr. W. T. Ross, of Picton, Ont., had sweet potatoes for breakfast one morning recently. They were grown in his own garden and he pronounces them of good quality. Mr. Ross, an enthusiastic amateur gardener, usually brings to perfection anything that he undertakes.

About the middle of Stptember, THE HORTICULTURIST received from Brown Brothers' Nurseries a small branch of an althea on which were flowers of two distinct colors. Most of the flowers were white. In the midst of them was one of a dark purple shade. The occurrence is unusual and interesting.

The 1907 New Model Little Giant Sprayer has all the improvements we think possible in a capable sprayer machine for apple orchard, small fruit, grape vine and peach work. It has an auxiliary air pump attachment which continually keeps the pressure so that in spraying large apple trees, the corners of 4 large trees may be sprayed while the vehicle is stationary. Another improvement is an automatic agitator which operates simultaneously with the walking beam of the pump. As this beam goes up and down, the liquid in the tank is continually being agitated, thus keeping it thoroughly stirred and properly mixed. The Little Giant Sprayer Mfg. Co. have also a new design in nozzles, which answers the purpose in every way for all tree work. The hose they will use on the machine is 5-ply pneumatic steel rubber tubing, guaranteed not to burst or leak. At the Toronto Exhibition they had wonderful success with their new machine, having taken orders for 30. They expect also to display this machine at the Ontario Hort. Exhibition and Honey Show in Toronto, Nov. 6–10.

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MCMILLAN & CO., KINGSTON—Beautiful walnut case, double rims, 7⅓ octaves, beautifully decorated top door, rocoa effect, Boston fall, full length rack, 3 pedals, handsome trusses; an instrument that will give good satisfaction and A1 value at..... $265

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POULTRY DEPT.

Conducted by S. Short, Ottawa

October is one of the most important months of the year to the poultry keeper. Next winter's egg supply depends largely on the management of the fowls now. The winter quarters should be overhauled and cleaned up. Fresh whitewash should be applied, broken panes of glass should be repaired and everything made ready for occupancy as soon as the frosts and cold autumn nights begin. After house-cleaning, a thorough inspection of the birds should be made with a view to weeding out the undesirable stock, as hens that are two and a half years old, cockerels not required for next season's breeding, and pullets that are undersized or culls.

Keeping fowls of all ages in a single pen at this season is the extreme of bad management. The old male abuses the young males. The young males annoy, constantly, the hens, which in turn injure the young pullets. The result is that the whole flock is in a state of irritation. The writer recently visited a friend who kept about 100 birds of all ages under the above conditions. The hens had not laid an egg for the last 2 weeks, and the young cockerels would not put on flesh so that the owner might kill them.

Prices for dressed poultry are better than ever they were in this province, Surplus cockerels that are reasonably well grown can be profitably marketed now. Such is better than holding them for a month or 6 weeks when their gain in weight will be offset by the lower prices which usually prevail at the end of Nov. and beginning of Dec., when the cold weather enables large quantities of dressed birds to be put on the market.

Judging from the smaller entries than last year at our large exhibitions, it would seem that the hot summer had retarded the growth of the chicks. At Ottawa, the quality and size of the birds exhibited, as well as the numbers, were somewhat behind that of former shows.

The keeping of pure-bred fowl is not as general in Canada as it ought to be. Our American cousins are ahead of us in this respect. Every 1 in 3 of the poultry breeders and farmers in the U.S. keeps pure-bred fowl. On a trip which took me through 19 states, a short time ago, I formed this estimate, and believe I am correct. On the western coast, the keenest rivalry prevails. Some of the articles in the poultry magazines are of the liveliest character. One in particular I think may be worthy of copying. I will include it in another issue. In some parts of Ont. I do not believe 1 in 10 keep pure breeds. In Que. perhaps 1 in 20. The breeds that are most popular in the States are the Plymouth Rocks, Wyandottes, Orpingtons and Leghorns. In the keeping of pure stock, Canadians can safely follow the example of the Americans, who are usually shrewd business people.

Many of the readers of THE CANADIAN HORTICULTURIST are keeping fowl either for pleasure or for profit. You will be interested in reading the full-page advertisement of The Golden Poultry and Kennels Co., of Chatham. They are offering to send the poultry paper which they publish to your home for 25 cts. a year.

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6-7-8-9-10

1906

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Will be run from all points in Ontario good going November 7 and 8, and return up to November 10, 1906, at lowest single first-class fare. These low rates will enable all interested in FRUIT, FLOWERS, VEGETABLES and HONEY to see the best Canada produces. The **BLACK DIKE BAND** has been secured to give performances in Toronto at this Exhibition; they will not play elsewhere in the city. This band is conceded to be the best of its kind in existence. New features are being added to make this Exhibition the most interesting as well as educational ever held. For prize-list and further particulars, apply to

Parliament Buildings, Toronto — H. B. COWAN, Secretary

The Canadian Horticulturist

Vol. XXIX NOVEMBER, 1906 No. 11

How Canadian Fruit is Sold in Great Britain

A MAN should be placed in London, during the fruit season, to represent the fruit interests of the Dominion. This should be done by the Dominion Fruit Division or the various cooperative fruit growers' associations could place a man there on their own behalf. Such a move would benefit the fruit industry in two ways; first, by making it possible to hold and dispose of fruit when the market is most favorable, and second, by lessening the chance of false reports being returned to the growers. By examining the fruit on arrival, the representative could determine the exact condition and report same to the person who made the consignment. The unsatisfactory manner in which Canadian apples are handled and disposed of by the majority of firms in Great Britain would warrant this move. It would be an important step in the placing of the Canadian fruit trade on a satisfactory basis. This was made evident to the staff representative of THE CANADIAN HORTICULTURIST this summer while visiting the Old Country on a tour of investigation along these lines.

The way in which Canadian apples are sold in the cities of Great Britain, where the fruit is landed, is as varied as one could imagine. Only a small percentage of our export apples are sold direct from the grower to British retailers. The larger portion is sold by auctioneers or brokers; the balance is sold by wholesale houses to the smaller dealers. The only claim one class of brokers can make to prove that they are fruit merchants is the business they conduct in importing fruit on consignment from small growers and dealers in Canada and other countries. Later, they turn it over to larger firms to dispose of, but not until they have deducted a liberal commission. In this transaction, it will be seen, the grower has to pay a double commission as well as run the chance that both of the dealers may make false returns.

All fruit merchants are not honest. The green fruit trade seems to offer splendid opportunities for dishonest individuals. When sending fruit to Great Britain on consignment, exporters should exercise great care to ascertain the financial standing of the consignees.

The formation of cooperative associations in Canada is approved by the majority of British fruit merchants. It is believed that these associations will help solve the dishonest packing problem, and lead to a reduction in the number of brands.

Owing to the dishonest manner in which some Canadian apples have been packed, a feeling of distrust exists among the retailers. While anxious to deal direct with the Canadian grower, the retailer will not take the risk. He prefers to buy from the auctioneers or brokers, so that he may examine the fruit before the purchase is made.

Small growers should not attempt to export fruit. A better plan is the formation of cooperative associations so that large shipments can be made under one brand. Then send only the best, and that properly packed. Fruit of uncertain quality finds a poor reception on the British market. It affords an excuse, which is quickly taken advantage of, to cut the quoted price. Many cases of fruit that left the orchard in Canada, apparently in good condition, were found, when opened in the auction room, to be slack. A small fault, perhaps, but sufficient to place the consignment among second-class fruit, and thereby reduce the price.

Leads Them All

I like THE CANADIAN HORTICULTURIST very much. It gives the best value of any horticultural paper in the world. There is no horticultural paper in England or Canada that can touch it. I know this because I have taken, at one time or another, all such papers in both countries.—Francis P. English, Niagara Falls South, Ont.

In a previous article it was stated that business arrangements did not permit of our representative being in Great Britain during the fruit season. He got a good idea of the way our fruit is cared for, however, by visiting the various warehouses, and observing the manner in which fruit from other countries was handled. At the time he was in London, the Tasmanian fruit season was nearing an end; the last cases in the different warehouses were being sold.

The larger portion of the fruit sold in London is disposed of by auctioneers or brokers in the vicinity of Covent Garden. There they have a large building erected for use as a fruit market. Each of the many firms represented there announce on blackboards, placed in front of their booths, the quantity and variety of the fruit they have for sale and the hour of the sale. The booths are arranged around the walls inside the hall. Above the booths are the offices, and in front is the auctioneers' stand. Sometimes rival firms conduct sales at the same hour, which has a depreciating effect on the prices realized for the fruit.

When the sales commence, the stand is usually surrounded by representatives of wholesale houses, large retail firms and small fruit dealers. These buyers are ready to purchase anywhere from one to 100 cases of fruit, according to the size of the business they represent. Unknown or unreliable parties must pay cash when the fruit is knocked down, others are given 30 days' time. Samples of the fruit are placed on the stand for inspection. In many instances, the entire lot is within a short distance of the auctioneer, and may be inspected by prospective purchasers before the sale starts. Immediately after the sale the fruit is removed to the purchasers' warehouses or stores. The whole transaction often is completed within 48 hours after the arrival of the ship.

The commission charged by auctioneers varies from 2½% to 10%. It is safer to trust the man who charges 10% than the man who is content to deduct the smaller figure. Experience has shown that 2½% is not enough commission to enable a broker to make an honest living, and as he has to live, the extra amount generally is made up by means of false returns to the grower. Instances are known where brokers have realized a handsome price for the fruit, and when the returns were made to the grower, they reported the fruit as being in bad shape on arrival. The grower, not be-

ing able to prove the contrary, has to be content with the amount remitted.

All firms engaged in the trade are not dishonest. This is a redeeming feature. During an interview with Mr. Lowe, of the firm of Notard & Lowe, of Fooley St., London, he said that his firm handles nearly 85% of the Nova Scotia apples that go to London. He intimated that his firm was anxious to secure more Ontario fruit. This firm does not dispose of their fruit by auction, but by private sale. They have been in the fruit business a long time. They know what fruit is worth, and usually they secure good prices. Garcia & Jacobs, also visited, are extensive importers of Canadian apples. Both of these firms have representatives in Canada.

In company with Mr. Bigrave, the London manager for the Thomson Steamship Line, the staff representative of THE HORTICULTURIST interviewed the secretary of the Surrey Dock Co., who promised the cooperation of his company in the establishing of a market of this nature. Most of the steamers from Canada dock with this company. If the fruit growers wish to make any suggestions in regard to the remodelling of a part of their warehouses for storing fruit, he will be pleased to receive such and cooperate with them.

In place of rushing the sale of the fruit, it could be held and for the most part sold privately. In some instances, several steamers may arrive on the same day. This means that all the fruit is placed on the market at one time, and thereby bring low prices. London alone can consume all the fruit Ontario can send, and if a man were placed there, much better returns would be the result. At first, much opposition would be met with, but this could be overcome by sending only a high quality of fruit.

The next port visited was Bristol. At one time this port was the leading port of entry for Canadian apples, but owing to carelessness on the part of the merchants, the business gradually decreased to little or nothing. This state of affairs is being rapidly overcome, and as soon as the new docks at Avonmouth are completed, it will rank among the best apple ports in Great Britain. There is a large territory adjacent to Bristol which must receive its apple supplies through this port. Messrs. H. H. & S. Budgett report that there will be a large demand for Canadian apples in that district this year. They are anxious to buy first-class fruit. They are the largest wholesale grocers in that city, and have been established over 100 years. Most of the apples sold in Bristol are handled by wholesale fruit merchants. The practice of auctioning fruit is not as extensively carried on there as at London and other centres. It may be said, also, that Bristol has a good reputation for honest dealing.

At Liverpool the conditions were found to be different from those in the two places previously visited. The fruit sales are practically controlled by six large firms of brokers. There are some smaller firms who are styled fruit brokers, but they invariably turn their consignments over to the larger firms.

There are two associations there that work together in the buying and selling of fruit; one is the Buyers' Association and the other is the Fruit Brokers' Association. There is an auction room situated in the centre of the wholesale district, where only members of these associations are permitted to enter. Our representative was present at a fruit sale as the guest of Mr. Roddie McFee, of James Adam & Son. Rising from the centre of the room to three of the sides are rows of seats for the attendants who wish to bid for the fruit. On the other side is the desk used by the auctioneer. In the centre of the room, in an enclosure, are two elevators for the bringing up of samples of the fruit for sale. Huge baskets are provided in which the entire contents of a barrel or box of fruit may be dumped, should the purchaser make the request. Each of the brokers take turns in conducting the sale of their fruit; and there is a constant changing of those who wish to buy. Long practice and a knowledge of the audience enables the brokers to dispose of an enormous quantity of fruit each day. Sales sometimes last from early morning until 10 or 12 o'clock at night. The fruit must be sold each day, as there is a similar quantity waiting to be disposed of on the day following.

The opinion was expressed by Mr. James Richardson, of Woodall & Co., that when Canadian fruit is shipped with fewer brands better prices will be realized. So many markings on the cases make it impossible to remember them all. Fewer brands will make more rapid sales possible. The grading and packing would be more uniform; as it is now, each brand has to be disposed of separately; by the end of the day the last lots put up often sell at a sacrifice.

Our representative called on McSymons & Co., 18 Dean St., who have several large grocery stores in Liverpool. They handle a large quantity of choice apples in boxes, but they buy only from the brokers. Some years ago they tried importing their apples direct. The first year they were greatly pleased with the fruit, but during the second and third years it was of inferior quality. They are not anxious to repeat the experiment until Canadian growers establish a better reputation for honest packing and good fruit. The Dominion Government should enforce a more thorough inspection of fruit, even than it does now, and the name of every dishonest packer should be published abroad as well as at home.

Fighting Insects in Fall

Although insects in the garden and orchard seem inevitable, yet they can be largely controlled if proper steps are taken and followed in a systematic manner. The thing is to know what to do and when to do it. It is a well-known fact that many of our most serious insect pests pass the winter months in the neighborhood of the crops upon which they feed during the summer. This, then, is the time and place to get at them. They are to be found under old boards, stones, or other trash lying on the ground; many hibernate just under the surface of the soil; fallen leaves and refuse vegetable matter protect others.

The plow and fire are the best agents of destruction, and the fall is the time to apply them. Plow the fence rows and pieces of unused sod in proximity to the crops. Pile up all the old refuse matter of any description that is lying around, as also all dead leaves, and burn it. And most important of all, gather up all remnants of crops in the orchard and garden and destroy them by fire or in the compost heap. Never leave potato vines in the field after harvest; this is the time that the stalk-weevil matures and escapes from its lair in the stem. Destroy the useless stubs of the cabbage and cauliflower plants; many a brood of lice is born on them while they lie on the ground. Cut-worms, green cabbage worms and the pupæ of many moths also very often reach maturity or pass the winter months on crop remnants.

Fire Blight in Pears.—Pear Blight is caused by a bacterial disease for which no satisfactory remedy has been found. It has been discovered that infection takes place through buds and flowers principally. The best remedy known, although not very satisfactory, is to cut off the affected branch about a foot below the diseased part as soon as noticed. As the disease may be carried from one tree to another on the knife, it is a good plan to disinfect the knife after each branch has been cut. Pears usually blight most when they are making strong, succulent growth, and it is best not to encourage too much growth for this reason. Bordeaux mixture has no effect on this disease.—W. T. Macoun, Ottawa.

Fruit for market should be of good size, fair appearance and good quality.

Fertilize Peach Soils When Trees are Dormant

TO maintain the fertility of peach soils, they should receive applications of essential fertilizers. This work, in some instances, should be done in fall after the leaves drop. For the peach, fertilizers that contain plenty of

Properly Packed Peaches

potash and phosphoric acid are required, and only small quantities of nitrogen. The proportion and quantity required for a particular orchard will vary with the texture and condition of the soil, and the amount and availability of the plant foods it already contains. The only way to determine the wants of the soil is to experiment and watch the results.

POTASH

The most essential element of fertility in a peach orchard is potash. It induces fruitfulness rather than excessive wood growth. Chemically speaking, it forms salts of the organic acids in the plant, it s supposed to assist in the formation of starch, and the assimilation of carbon, and it influences the flavor. Also, when abundantly supplied, it causes the fruit to color up better. It is often deficient in peach soils, and must be supplied artificially.

The most economical source of potash is unleached hardwood ashes. These also supply a small amount of phosphoric acid. The potash in wood ashes is immediately available. Forty to fifty bushels an acre is the usual rate of application. Muriate of potash is a form of potash that also gives excellent results with peach trees. It is a definite compound containing about 50 per cent. of actual potash, and may be used at the rate of 200 pounds an acre. This and other references to the amount required are merely suggestions. Local conditions and experiment alone can tell.

A common potassium salt used as manure is kainite. It is an impure form of muriate of potash, containing about 13 per cent. of potash. Sulphate of potash is also used by some growers.

Potassic manures should be spread over the ground when the trees are dormant in fall or spring, and worked in with a cultivator. Wood ashes may be applied at any time.

PHOSPHORIC ACID

Phosphoric acid in some commercial form is essential to the growing of good peaches. The tree, the fruit, and the seed are benefited most decidedly by its application. Peach soils, being light and sandy, are likely to be deficient in this constituent. In heavier soils, it is often present in an unavailable form, and requires cultivation to liberate it. Phosphoric acid is usually applied to the soil in the form of bone meal or superphosphates Bone meal also supplies a small quantity of nitrogen. Superphosphates are apt to be strongly acid, and should be applied in the fall or winter when the tree is dormant, and at the rate of about 200 pounds an acre. Thomas or basic slag is a form of phosphoric acid that gives very good results on sandy soils. It must be very finely ground, as it parts with its fertility very slowly. Dissolved South Carolina rock is another valuable form of this fertilizer.

NITROGEN

An over supply of nitrogen is ruinous to peach trees. It has been found that "the peach is the healthiest and yields the best fruit on soils which for most crops would be considered deficient in nitrogen." Also, that trees suffer from winter-killing when overfed with nitrogen, are more liable to be infected with brown rot, and produce later and poorer crops of fruit. It is obvious, then, that one must be cautious when using nitrogenous fertilizers.

A liberal application of nitrogen is important, however, for young growing trees and for mature trees when the leaves appear smaller than natural, and take on a yellowish color. Although this condition of the leaves usually indicates a lack of nitrogen, it also may indicate an excess of moisture in the soil. Too much nitrogen is indicated by unusually dark green foliage, rank growth, large crops of small, poorly-colored fruit, or no crop at all, and immaturity of the wood in fall.

When nitrogen is required to stimulate early growth or restore impoverished bearing trees, it is most effectively applied in the form of nitrate of soda. Another commercial form is sulphate of ammonium. This, also, may be used for peaches, but it is not so quick in its action as the nitrate.

The most economical method of furnishing nitrogen is by means of tillage and green leguminous manures; the former promotes nitrification, the latter indirectly adds nitrogen to the soil from the air, and it also prevents the leaching of nitrates already in the soil. On poor, gravelly knolls some commercial form of nitrogen may be used with advantage, and it should be applied early in the season, as late applications tend to prevent a proper ripening of the wood for winter.

BARNYARD MANURE

Barnyard manure as a fertilizer for peach trees is not favored by the majority of orchardists. Its use seems to encourage fungous diseases, more so than artificial fertilizers. Mr. J. H. Hale, the "peach king," says that peaches stimulated by stable manure are more liable to yellows than those fertilized by com-

A Uniform and Correct Pack for Pears

mercial fertilizers. The effect of barnyard manure is similar to that of other nitrogenous fertilizers, and its use may be governed by similar conditions. For young orchards on poor soil its use is beneficial. Two or three forkfuls of manure spread around each young tree in winter may be of value. Generally speaking, however, the profitable use of stable manure in peach orchards is confined, as in this case, to the stimulation of early growth in newly-set orchards.

Protect the Strawberry Plants

TO protect strawberry plants from the cold of winter and from the disastrous effects of alternate freezing and thawing in spring, it is necessary to give them some protection. This is best done by means of mulching. Besides being a protection against severe weather, a good mulch should enrich the soil, and if skilfully handled, it will delay the ripening of the fruit in spring as much as a week and more.

While it is desirable in most strawberry districts to secure earliness in fruiting, there are some sections in Canada where the profits of the strawberry patch would be materially increased if the crop were to ripen a few days later than is usual. It is important then for growers to consider carefully the possibilities of mulching for this purpose, but it must be practised with caution. Although some growers may delay fruiting through personal skill and the effect of favorable conditions, a mulch of sufficient depth to retard vegetation is apt to injure the young plants and, if left too long, it will rot and kill them.

The kind of material to use for mulching depends on what can be obtained most readily. To combine manurial value with protection, strawy horse manure is the most satisfactory. It can be obtained quite readily in most localities. It should not be applied, however, quite so heavily as some of the lighter mulches, such as clean straw or hay. An objectionable feature in connection with the use of strawy horse manure, particularly that drawn from city stables, is that it is apt to contain a large number of weed seeds. This objection is seldom strong enough, however, to overcome the advantage gained by its use as a fertilizer and for protection.

The time to apply the mulch is governed by the lateness of the season. Usually it is applied soon after the ground becomes frozen hard enough to carry the horses and wagon. The covering should not be heavy enough to smother the plants. Should the winds of winter remove a considerable portion of the mulch during seasons of little snow, it is well, towards spring, to cover these bare spots, if material and time are plenty. Alternate thawing and freezing in spring do more damage than the cold and frosts of winter.

In spring the covering may be removed as soon as danger of frosts is past, or if it is desired to retard fruiting, a few days later. It is best to do this on a dark day to mitigate the effect of a sudden change from protection to light.

Rake the mulch off the plants to the space between the rows where it will serve to keep down weeds and to conserve moisture, which is so necessary to the production of large, high grade berries. A mulch between the rows in early summer also serves to make clean picking for the pickers, and to keep the berries from being splashed with sand during rains.

Fall Work With Plum Trees

In the treatment of a plum orchard, Mr. F. G. Stewart, of Homer, gives the following advice: "Spray plum trees in fall after the fruit and leaves are off. This kills the fungus of the Black Knot. The spores of this fungus develop twice a year, in summer and in winter. Spraying in the fall washes down and prevents the spread and development of the summer spores for the next season. Use the sulphate of copper solution, four pounds to the barrel, and apply any time after the leaves fall. This solution also helps to prevent plum rot.

"Plow to the trees about the end of October or first of November, to throw the water away from the roots. This leaves a furrow or ditch between the rows which must be opened at the ends to let the water away. If the plowing is not done until late, the ground should be harrowed so as not to leave it too open and so admit the frost. If the ground is left open, the water goes in and freezes in little pools around the roots. When the soil is packed tightly around the roots, however, the trees always do much better."

Two Ways of Pruning Grape Vines

Which is the best, cheapest and easiest method of pruning grapes, the fan or Kniffen system?—P. E. K., Halton Co., Ont.

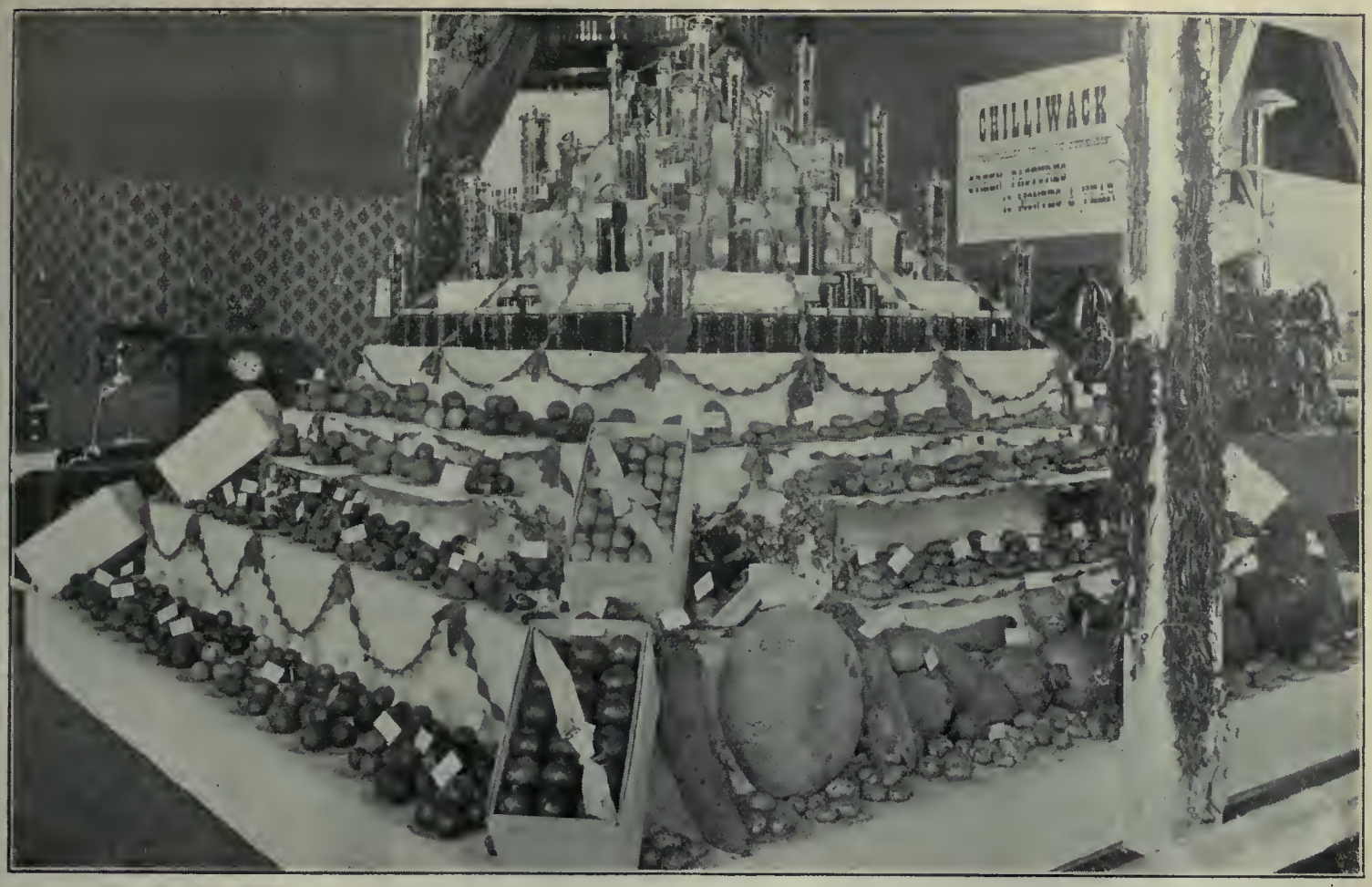
IN all grape-growing localities, the Kniffen system is the best and cheapest for strong growing varieties, such as Niagara. It is best because it requires less care and work, and it is cheap. It saves money in time and labor. Only two wires, instead of three or four, are required for the trellis. Slow growing varieties, such as Delaware, are better trained on the fan system, as they must be renewed from a point nearer the ground. When following the fan system the pruner can always cut to good wood; when following a more definite system, as the Kniffen, sometimes he must cut at a loss.

The fan system is briefly as follows: When planting, cut the vine back to two buds; next spring, again cut back to two buds; second spring after planting, if vine is strong, leave one cane about two or three feet long, and tie up to trellis wires. When growth on this is about six inches long, rub off all sprouts below the point on the upright where it is desired to start the fan. Third spring, prune back to six or eight buds the strongest canes that arise from near a central point below first wire; tie about three of these fan-shaped to the wires and remove all the rest. The following seasons, renew the wood from as near the trunk as possible and increase the number of arms to five or more if growth is strong.

A vine trained by the Kniffen system consists of an upright trunk or standard and four arms. To produce this result the young vine is treated similar to the fan system for two seasons. The second spring after planting, select the strongest cane and tie it straight and firmly to the top wire, cutting everything else away. The third spring, select four arms, two on opposite sides of the standard near the lower wire and two similarly placed near the upper wire, cut these back to six or eight buds according to the length of the joints on the cane, tie them to the wires, and remove all other canes. The fourth and subsequent years renew the arms with wood that arises from a point as near to the central standard as possible.

Apples for storing should be picked, barrelled and placed in a shed, then, when hard frosts come, put in a cool cellar. A slight frost will do no injury, but it is best to keep the apples as cool as possible without freezing.

As a rule the finest and highest priced fruits are the most difficult to raise.



The Chilliwack Exhibit at the recent Provincial Fair in British Columbia

The Seedless Apple from Another View Point

Prof. John Craig, Cornell University, Ithaca, N.Y.

THE last issue of THE CANADIAN HORTICULTURIST contains the most astonishing, I was almost going to say paralyzing, statement that I have read for some time. I refer to the position of the Hon. John Dryden in regard to this new-old fruit, called the Spencer Seedless Apple. It is almost inconceivable that a man of Mr. Dryden's standing in the agricultural community, and a man who has unquestionably labored unselfishly and sincerely for the agricultural interests of the province, should lend himself to a project which, to the enlightened pomologists of this country, seems to be absolutely indefensible. If Mr. Dryden has seen old established trees bearing in any place, we might have condoned the position he has taken to some extent. If he had any personal evidence that this fruit was good to eat when it was ripe, that it was any advance on the ordinary commercial apple, or any knowledge that it would succeed under our eastern conditions, there might be some further slight excuse for the position which he takes. Ten-year-old orchard trees, or two-year nursery stock under irrigated conditions in southern Colorado do not furnish an Ontario man with suitable data for making deductions along lines of adaptability to Ontario climate and soil.

SEEDLESS APPLE NOT TESTED

For many years Mr. Dryden has been associated with experimental work. He realizes the desirability and advantage of it. Otherwise he would not have urged the appropriation of money for the establishment of fruit-testing stations and agricultural colleges. This fruit has never been tested at any station. No sample can be secured by any station. Yet, Mr. Dryden is willing to lend the strength of his name and the prestige of his former position to the exploiting of a variety which is known to be of poor quality and which may be of absolutely no value in this section. This is the position, and I must admit that the explanation given by Mr. Dryden in the recent number of THE CANADIAN HORTICULTURIST is no sufficient justification for his attitude on this question.

There is no reasonable doubt whatever that this same seedless apple has appeared in different parts of the country over a large number of years. If it had been of such transcendent value, the persons on whose farms it grew would not be foolish enough to allow a good thing to be lost sight of.

The apple was exhibited at the State Fruit Growers' Association meeting in Lockport, N.Y., last winter. I had the privilege of examining the Colorado-grown specimens and of testing its quality in company with a number of experienced fruit growers. The average specimen was medium in size and unattractive in color. The quality was unanimously voted to be poorer than Ben Davis—a New York-grown Ben Davis at that. The reasons for advocating the cultivation of an untried variety of poorer quality than Ben Davis, and at $2.50 a tree, by a man of Mr. Dryden's judgment and experience, are very obscure.

Decorating the Dining Table with Fruit and Flowers*

DECORATION of the dinner table is an art that appeals to every one interested in gardening. No hard and fast rules can be laid down, as so much depends on the size of the table to be decorated, the material available to work with, the likes and dislikes of those whom it is desired to please.

VASES

The vases or other receptacles for flowers vary greatly in style, form and size; in fact, almost to an endless extent. Many of them are very ornamental as well as useful, and a picture in themselves even when empty. As a rule, the more ornamental the vase the less suitable it becomes for tasteful arrangement of flowers; of course, there are many elegantly shaped vases that show off floral decorations exceedingly well, but much of the design and beauty are concealed. Sometimes special designs or colors are used for special purposes or occasions, which, of course, must conform to the size of other objects on the same table.

Not a Dining Table, but Decorations as Beautiful shown at Brantford

There are many beautiful forms of vases suitable for the dinner table; but flowers generally look best when arranged in glass than in vases made of other material. Multiplex, convertible, or any other table vases may be used. When convertible vases are employed and the flowers are to be arranged in tiers; in other words, one lot above the other, they should be sorted according to size, the largest flowers at the bottom or base, medium sized flowers in the centre, and the smallest and lightest flowers on the top. A few medium sized flowers among the lighter ones will give strength and character to the top of an arrangement; and a few of the lightest flowers should be placed among the large ones in the base. This addition generally improves the whole arrangement, giving it a light and graceful effect.

ARRANGEMENT OF FLOWERS

Flowers should also be sorted according to form and color. Those of a similar form group much better than mixed forms. Colors must be employed that will harmonize or contrast well, using the darkest shades below and light ones above. Sometimes shades of color are allowed to be of more consequence than size of flowers. Small flowers of a dark shade, arranged in a bold mass at the base of a vase, look well with larger flowers of lighter shades arranged above them.

Some kinds of flowers which look well by daylight are utter failures under electric or other light. Yellow flowers of any shade, for instance, are very effective by daylight; under artificial light they are much paler, some of the lighter shades of yellow appearing white, or almost white. Bright hued flowers, such as bright shades of red, crimson or pink, always look well under any light. Light blue, or mauve, does not light up well; yet shades of purple are very effective.

PLANTS TO USE

There are many foliage and flowering plants suitable for table decorations either used alone or in combination with ferns or other green for a base. Plants over 15 inches in height should not be employed. A point could be strained with a tall-stemmed Cocos Weddeliana, or some of the aralias, such as Aralia gracillima and elegantissima, or plants of that description, when the foliage is graceful and yet not too dense to obstruct the view. Small standard plants with a light and graceful head can be used. Such plants must have a slender and clear stem of 20 inches from the table to the lower branches. Tall glass vases with a slender stem can with discretion be employed in the same way. The stems of plants or vases can be improved by entwining them with light and graceful vines such as Asparagus plumosus, and so on, provided the view is not obstructed between 15 and 20 inches, so as to prevent the guests seeing each other quite freely. The size of vases and plants must be regulated by the size and form of the table. If the vases are too small, the decoration will appear small and lacking in character, no matter how the flowers are arranged. Then, again, if the vases or plants are too large, the result will be a heavy effect. A very effective arrangement can be had by trailing strings of asparagus, smilax or other vines from the centre candelabra and looping them to candlesticks, provided the work is lightly done.

The following plants are very useful for table work, when symmetrical and of proper size. Pandanus Veitchii, P. graminæfolius, small, graceful-leaved dracænas and crotons, Cocos Weddeliana, and such ferns as Adiantum cuneatum, A. Farleyense, and so on. Among the best flowering plants for tables are Begonia Gloire de Lorraine, Primula obconica grandiflora, P. chinensis, P. stellata, cyclamen, lily of the valley, ericas, and so on.

Sometimes silver plate is heavily displayed; others use valuable and beautiful china in their table arrangement. In this case small plants are more in keeping than flowers in vases. In order to offset the stiffness, the cloth can be trailed with asparagus or other green, with a few flowers carelessly scattered here and there; or oblong sprays of Clematis paniculata, Euphorbia jacquiniæflora, Bougainvillea glabra, B. Sanderiana, tropæolums, and so on.

*A paper read by Mr. Geo. H. Hale before the Monmouth County (New Jersey) Horticultural Society.

can be used in place of green. The plants should be knocked out of the pots and placed in other receptacles; if the latter are too small or shallow to receive the plants, the balls can be reduced or cut to fit.

A Centrepiece of Fruit and Flowers

If no receptacles are on hand, the plant can be placed on pieces of paper or other material to save the cloth. Mounds of moss can be made around the ball of earth and covered with fern, asparagus, smilax or other green; and flowers of one kind and color placed on the mounds.

SOME FLOWER COMBINATIONS

But orchids, such as cattleyas in variety, cypripediums, lælias, oncidiums, odontoglossums, cœlogyne, calanthes, and so on, make rich and beautiful decorations for the table. Each kind should be used separately and arranged so that every individual bloom will not look crowded and will show to best advantage.

Calanthes Veitchii and lily of the valley, with fern fronds, make a beautiful combination. Small chrysanthemums in their season are much used and are very attractive. Lily of the valley and Richmond, Meteor or General Jacqueminot roses, Roman hyacinths and Salvia splendens make rich and very attractive arrangements. Sweet peas are among the best flowers for table work, when properly blended. Sweet peas and Gypsophila paniculata and fine fern fronds create a grand effect, especially under artificial light.

Roses are most generally used and they are the most popular; in my estimation, the rose is queen, no matter where or how employed. When roses are used for table work they should be arranged with their own foliage and, generally, one variety or color employed. Carnations are very suitable among the best for table or other decoration, and should be arranged in one or possibly two colors The most important point is to see that the color of the flowers used harmonizes as nearly as possible with the dishes or other ornaments on the table. Primula obconica, P. chinensis, P. stellata, the many varieties of narcissus, freesias, tulips, poppies, coreopsis, godetia, Helianthus cucumerifolia and multiflora fl. pl., and many other kinds of flowers, are all very useful for table work.

THE USE OF FRUIT

Fruit is used very often as a part of table decorations, and if possible should be displayed on glass dishes, as glass seems to show off fruit better than dishes made of other material. Fruit, as a rule, looks best dressed with its own foliage; but when dishes have to be dressed several hours ahead of time, as necessity very often requires, the leaves generally curl and lose their shape. In this case it would be preferable to employ leaves of a thicker texture, such as those of ivy, laurel, aucuba, bay, and so on, as they will keep longer out of water.

Pineapples should be dressed with their own foliage. Maidenhair fern can be used with strawberries and kept fresh by utilizing small glass tubes filled with water inserted among the fruit. Strawberry plants that have good large ripe fruits hanging, make a very effective centrepiece for the dinner table. The plants can be turned out of the pots and the balls cut down so that several plants can be arranged in one dish.

CENTREPIECES

For a table set for not over 16 persons, it is advisable to have only one large well-arranged centrepiece, and to make every ornament upon the table (whether floral or otherwise) subordinate to the centre one. If the table should be so long as to require three principal pieces, it would be best to use two elegant plants with graceful and finely divided foliage, one at each end; they will set off the central floral arrangement much better than two other floral pieces would.

It is essential that everything on the table should harmonize so that it will please the most critical eye. Strong color contrasts must always be avoided.

Trouble With Azalea

About Christmas last year I purchased a fine plant of azalea. After a short time all the leaves fell off; what, probably, caused it?—R. S., Toronto.

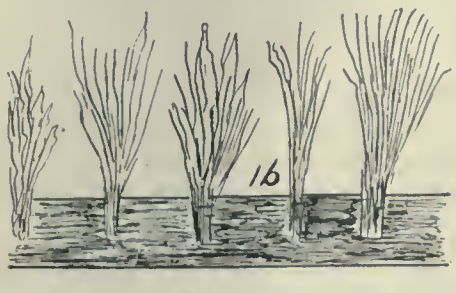
This plant most likely has been allowed to become dry at the root. This, with the dry air of ordinary dwelling houses, spoils these plants. When they have dropped their leaves they are of little use. An azalea in full bloom, that is to be used as a house plant, should be thoroughly watered when received and should be kept well watered and in a cool, light place, where the air is as fresh as possible.—Answered by Thos. Manton, Eglinton, Ont.

An Artistic Scheme of Table Decoration

I have been a subscriber of THE HORTICULTURIST since 1890, and hope to be for a great many years to come. Your magazine has given me much pleasure. I have recently acquired all the back volumes, except two, which, as yet, I have been unable to secure.—Chas. R. Hext, Brantford, Ont.

The Fall Care of Roses

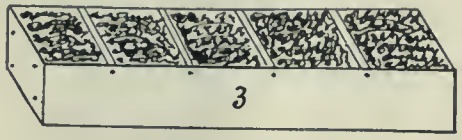
WINTER protection for roses is a necessity in a climate that is severe. The accompanying cuts illustrate how it is done by Mr. W. G.



A Little Work Will Protect Them

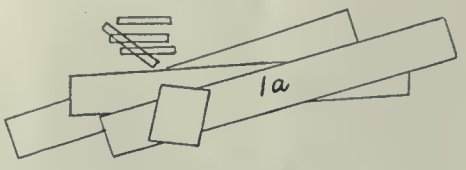
Black, of Ottawa. In his own words the operation is described as follows:

'It is said that an ounce of illustration is worth a pound of talk. Adopting that idea, I have made some rough pencil illustrations of the various stages in the work of protecting roses as practised by myself for five or six years with satisfactory results. Roses put away in this shape can be taken out in spring with canes as plump, green and fresh as the day they were put down. The experimental farm at Ottawa recently adopted the same system of keeping roses and with similar results.



Ready for the Cover

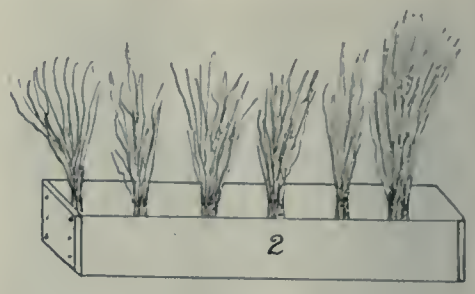
"The teaching of the illustrations is as follows: No. 1b represents six roses planted in a row of 12 feet long. In cut No. 1a there are three boards and two pieces for ends to make a box, some small sticks to hold the roses down and some dry leaves. No. 2 shows the two



The Material

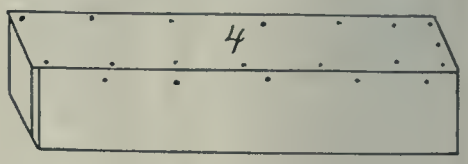
sides of the box with ends nailed on around the six roses. No. 3 shows the roses bent down, and held there by the little braces that are held in place by nails driven through from the outside and the box filled up with dry leaves. In No. 4 the cover is on ready for the severest kind of a winter.

"Before the cover is put on it is best to dust a little powdered sulphur and red pepper, mixed together, into the box. The powdered sulphur prevents mildew, and the red pepper prevents



The First Step

mice from harboring in the box or among the leaves during the winter. It is hoped that these illustrations will convey to the amateur rose grower a method of winter protection for the finest flower that grows."



The Job Done

The Driveway

RURAL grounds in Ontario are too often neglected—a place should mean something. The fall is the ideal time to begin a plan of improvement. The home ground should be home-like, retired, cozy.

Think of your driveway this November and its effect from the house and from the road. Have you a border planting of trees for foliage effects? Have you against these, long flower beds for decorations? Study the beautifying results obtained with shrubs of long and lovely lives that are native to the soil and quite as satisfactory as any foreign bush. The cut shows a driveway laid out in 1897, on the beautiful grounds of Mr. A. K. Goodman, of Cayuga, Ont.

Driveways are Important Factors in the Landscape

Prune Raspberries by cutting out all old canes that have fruited, and small or weak canes of the present season's growth. These are burnt so as to destroy any insects or disease that may be lurking there. Early in the spring we go over the rows with the hedge shears cutting back the fruiting canes, removing six to 10 inches of the tips. In that way stronger laterals or branches will be thrown out, and the fruit will be of better quality. This method of growing raspberries is termed the hedge-row system.—A. E. Sherrington, Walkerton, Ont.

Have any readers of THE HORTICULTURIST had any experience in growing apricots? If so, kindly give best varieties, best kind of soil, how to plant, and general cultural directions.

A Civic Enemy: The Tussock Moth*

Prof. D. P. Penhallow, McGill University

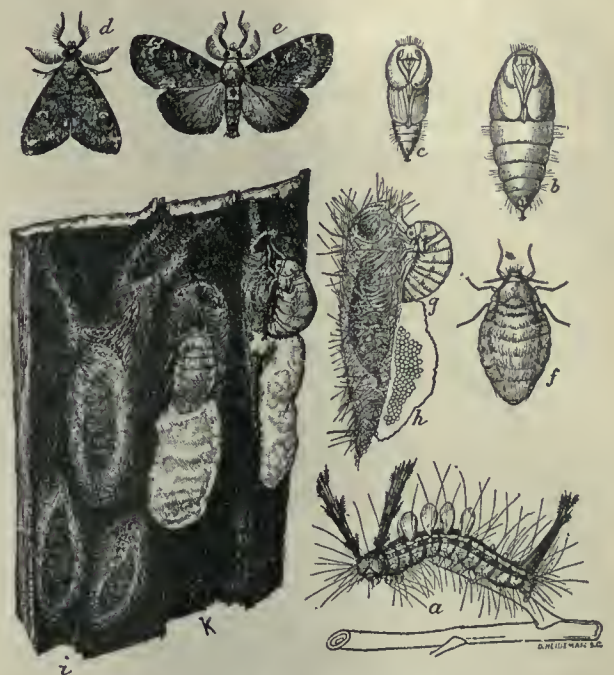
THE past year's discussion in the press of Montreal, Toronto and other cities, relative to the appearance of the Tussock Moth, has directed attention to a matter of very great interest to all cities where shade trees are regarded as of essential value. Among the many insect enemies of our shade trees, the Tussock Moth is one of the worst, since it multiplies rapidly, and the very large number of insects produced by a single brood leads to the rapid defoliation of the trees upon which they occur. Fortunately, as pointed out by Dr. Fletcher, the danger here is not so great as farther south, since with us there is only one brood each year, while in the northern states there are two broods and in the southern states probably three broods in a season. This difference is due to the fact that we are situated near the northern limit of distribution, and it is therefore a much less difficult matter to control the insect or even to exterminate it if proper measures are adopted. As an aid to human endeavor in this direction, birds and natural parasites constitute an important element, but even under such conditions it is possible for the insect to get beyond control and to cause the most serious damage to one of the most valuable assets a city can have.

That the Tussock Moth is not regarded with indifference or allowed to be controlled by its natural enemies, is evident from the great care taken, and the large amount of money annually expended, by cities in the United States, for its extermination. As the female does not fly, the distribution is effected either by the migration of the caterpillars from tree to tree in search of food, or by their transport on vehicles, animals or people upon whom they may fall from trees. It therefore follows that when the insects are found in a restricted area, it is possible to confine them there, if prompt and efficient measures be taken.

In winter and early spring the eggs may be readily detected and destroyed either by picking and burning, or by the use of creosote oil which is far more expeditious and economical. But if the eggs are allowed to hatch, which they will do about the first of May, the situation becomes a much more difficult one to deal with, as then the only effective remedy is to be found in spraying, a process which will not only involve expensive apparatus but the expenditure of much time and labor, with the result that extermination will not be as effective and complete.

There is only one way to deal with such a problem, and that is to take prompt and efficient measures *at the time when a minimum of labor and expense will be demanded.* The indifference which leaves such matters to the natural course of events in the hope that the difficulty may right itself, is not justified by any policy of good municipal government.

Shade trees are among the most valuable assets a city can have. They not only add a great element of beauty and general attractiveness to otherwise barren stretches of pavement and dwellings, but they contribute to the actual health and moral tone of the community in ways which are too numerous and too well known to require restatement here. The mere fact that in all the most cultured and enlightened communities of the world, streets are provided with trees at great cost and maintained with great care, is in itself sufficient proof that they are esteemed beyond the ordinary standards of pecuniary value. But from a merely monetary point of view, a well-grown tree is worth anywhere from $100 to $500 according to its kind and size.



The White-Marked Tussock Moth

Orgyia leucostigma. *a*, larva; *b*, female pupa; *c*, male pupa; *d*, *e*, male moth; *f*, female moth; *g*, same ovipositing; *h*, egg mass; *i*, male cocoons; *k*, female cocoons, with moths carrying eggs.

Silver Maple Leaves Eaten by Larvæ.

In successive stages of growth from *a* (newly hatched larvæ) to *f* (full-grown larvæ).

It is, therefore, not inappropriate to urge in the most insistent manner, that our cities should take efficient measures for the better care of its trees, and that it should not allow such pests as the Tussock Moth to work unchecked.

Protect the Birds

Our birds deserve protection and encouragement. Some birds, the robins, for instance, do destroy some few small fruits during a short season in the year, June and July; but the amount of fruit they save, in the destruction of insects throughout the whole year, is of infinitely greater moment. The robins' appetite for insects is never satisfied; and the fruit grower should ignore his slight depredations on cherries and other fruits in the light of his greater benefits.

However, there is an easy and desirable means of saving even this small amount of fruit that the birds eat, and that is to supply them with something still more desirable in their eyes. The Russian mulberry tree looks well and bears heavily, while the birds prefer the berries to any of our small fruits. If these trees were liberally planted throughout the country, the fruit would be saved for commercial purposes, and the birds for insect destroyers.

*THE CANADIAN HORTICULTURIST has received a number of requests for information regarding the Tussock Moth, which has done much damage to shade trees in various Canadian cities during the past summer. We have pleasure, therefore, in reproducing this article with cuts from and by permission of *The Canadian Municipal Journal.*

Lawn and Garden Notes for November

NOVEMBER is the time to make things snug and secure for winter. No diseased roots or leaves of plants should be left on the garden to carry spores over for next year. Rubbish of all kinds serves as hiding places for insects during the winter. Therefore, clean up before the snow comes.

Would it not be well to change the garden location for next year? If not, then change the positions of the crops grown in the present location. Plan this fall for a change. Some crops feed deeply, others on the surface. Some are exhausting, others are not. There are many reasons for practising a rotation even on a small plot. Think about it.

VEGETABLES OUTSIDE AND IN

If you have not done so, plow or spade the garden and turn under all the manure you can. Do not leave this work until spring. There is more time now, and the action of winter frosts and freezing will pulverize the soil and kill many insects that hibernate below ground.

If the garden is not well drained, this is the best time to make it so. Trenching and subsoiling are permanent improvements.

Gather and burn all weeds, especially those that bear seed pods. Did you sow seeds of prickly or winter spinach in September? If so, the plants should be protected on the approach of winter with a covering of coarse straw.

Perhaps that asparagus bed has not yet been attended to. Break down the tops, remove and burn them, and then apply a dressing of manure.

There is plenty of time to start a mushroom bed. It is interesting work. Do not be discouraged if the first attempt is disappointing. It won't be if you do not forget the details. Mushrooms are sensitive to lack of attention.

Rhubarb for winter use may be grown in the house cellar. Take up some roots, leave them two weeks in a cold frame or in a corner, and then place them in the cellar. Pull the stalks as soon as they are ready. When the crop is about done, throw the old roots outside or they will decay and become ill-odored.

Celery should be dug now and stored in the cellar. Pack the stalks upright and close together with the roots in sand. Should the tops show signs of wilting, apply water to the roots. Never sprinkle the leaves or stalks, as it induces decay.

FALL WORK WITH FRUIT

Mulch the strawberry bed but not until the ground is frozen to a depth of four to six inches. Apply clean straw or hay. Manure will do, but it is apt to contain weed seeds.

Place a few forkfuls of manure around the raspberry and blackberry bushes.

Currants and gooseberries are the hardiest fruits we have. They may be planted in November. Buy good plants of the best varieties. For the home garden excellent varieties of currants are: Red Cherry and Fay's Prolific; white, White Grape; black, Naples. Two good varieties of gooseberries are Pearl and Downing. The best English gooseberry is Whitesmith, but it is troublesome on account of mildew.

A Home-Made Hanging Basket

If you have some old bushes of these fruits, would it not be interesting to propagate new ones yourself? Take cuttings of the past season's growth. Make them about eight inches long. At the bottom, cut clean and square just below a joint; the top may be cut off obliquely and between the joints. It would be better to store these for a time to allow them to callous. Place the cuttings in sand or sawdust, butts uppermost, for a couple of weeks. Then plant in a row in the garden. In a year's time, the new plants may be transplanted to permanent quarters.

Gooseberry and currant bushes may be pruned any time after the leaves fall. There are different ways of doing this. Perhaps the best method is to follow the bush form, allowing about six branches to the bush. A renewal system of pruning is best, whereby one-third of the bush is renewed each year. Cut out two of the oldest canes and allow two new ones to take their places. The ends of the new growth should be shortened.

Do not leave any grass or rubbish around the base of your fruit trees for mice to nest in. If the trees are young, it is advisable to wrap the trunks with building paper and throw a small mound of earth around the bottom.

THE OUTDOOR GARDEN

Certain kinds of plants require protection in winter. While this is true, do not do it too soon. Plants often are injured by being covered too early.

Protect the roses. There are various ways of doing it. Read the article on another page.

Dwarf shrubs may be protected by placing a barrel over them and filling with leaves. Bore holes in the barrel for ventilation. If barrels are considered unsightly, cover them with evergreen boughs.

Gaillardias, campanulas, peonies, and many other border plants that may require protection may be covered with leaves and a little stable manure. Do not apply a heavy cover.

Hardy bulbs may be planted yet. Do not expect as good results as from those planted earlier in the season. Late planted bulbs require protection; early planted ones, also, but not so much. Most bulb beds are benefited during severe winters by having a mulch of straw manure, three or four inches deep, spread over them. If leaves and spruce boughs are easier to obtain, they will serve just as well. Do not cover the beds until after the ground has frozen solid.

WINDOW BOXES INSIDE

A serviceable way to winter tender plants is in a box placed inside the window and about one foot from the glass. Have the box eight inches wide, six inches deep and of sufficient length to fit the window. Bore several holes in the bottom for drainage. A tin tray of similar size should be provided to catch the water that soaks through. Between the box and tray should be small blocks of wood, so that they will

not fit tightly together. Support the box with brackets. In it put some broken flower pots or other material to facilitate drainage and fill with soil.

If the weather is open and no hard frosts prevail, some of the hardier perennials may be planted this month. Among those that succeed well, if planted at this time, are German iris, some varieties of peony, dielytra, and lily of the valley. With the exception of the iris, these plants should be mulched later on with long strawy manure.

Now is the best time to make new walks and driveways, flower beds or borders.

BULBS FOR THE HOUSE

Bulbs for house culture may be potted from September until late in fall. Some growers say that November is the best month.

Make sure that the bulbs in pots are well rooted in the cellar or some cold, dark place before being brought out into the window or greenhouse. Securing good roots to hyacinths, tulips and narcissi is the most important point to be considered in successful bulb culture. Bulbs that were potted in September may now be brought to the light.

Pots of freesias should be placed in a semi-light place until started, then given the benefit of the sun and sufficient moisture to keep the soil moist, but not saturated. Do not give liquid manure to freesias. They do not like it.

Try some Chinese sacred lilies and hyacinths in water bowls.

If you start bulbs of Roman hyacinths early in November, you can have the bloom for Christmas.

Why not try a few "pips" of lily of the valley? They are rather hard to grow in the house—unless proper care is exercised. They require a temperature of 75 degrees. Some amateurs grow them near steam pipes from the house furnace, and even near the kitchen range. If you have a greenhouse, so much the better.

Gloxinia, tuberous begonia, and fancy caladium bulbs should be kept dry and stored away in the pots; or, the bulbs may be taken out, packed in dry soil, and placed in a cool temperature not lower than 45 degrees.

THE WINDOW GARDEN

If you have not arranged for potting soil for use later on, do so now before it is too late.

Every fine day give your house plants a draught of fresh air, but do not have the draught come directly across the plants. Open a window or door some distance from them.

As the weather grows colder, the heat must be increased. This will result in an increased dryness of the atmosphere, and this induces a visit from insect pests. Look out for aphids and red spider. The latter s most to be feared. Sprinkle often with cold water. For aphids, use tobacco water.

Remember the mistake that often is made by amateurs in regard to the watering of house plants. Do not give water every day. That is wrong. Water the plants only when they need it, and then do not delay. Plants need water when the surface of the soil is dry. This can be learned by tapping the pot with the knuckles and getting a ringing sound for dryness and a dead sound when the soil is wet enough. Dryness may be determined, also, by rubbing the surface soil with the finger; if it sticks to the finger, it is moist enough, but if it feels dry, it needs water. When watering, apply enough to penetrate the soil to the bottom of the pot. Do not allow plants to stand in saucers or pans of water.

When potting plants, water well the first time. Procure new pots if possible. When old pots are used, wash them inside and out. Be sure and put a layer of small stones or bits of broken flower pots in the bottom for drainage.

An excellent decorative plant for the window is *Anthericum picturatum.* Give it a warm, shady position and a moist soil. Have you a plant or two of *Impatiens Sultani*, sometimes called the "Patience Plant"? Some varieties of this plant are very attractive. A warm, sunny position gives the greatest profusion of bloom.

Spiræa Van Houttei

A. K. Goodman, Cayuga, Ont.

Of the many choice hardy shrubs that may be planted in November, none give more satisfaction or greater pleasure than that beautiful, free-flowering, white spiræa, Van Houttei. Its season of bloom is June, and though, like other shrubs, it loyally responds to intelligent cultivation you may use it in any place and in any soil with advantage.

Plant a Shrub Like This for a Similar Effect Later On

The illustration shows one that has been used effectively as a single specimen on the terrace bordering a lawn. It was planted in 1897 and each year its bloom is so striking as to compel attention from every passing flower-lover. The terrace was made from clay taken from a foundation cellar. The shrub was planted simply; it never was cultivated, dug around, pruned, fertilized or watered. It has grown naturally into one of the most perfect specimens of its kind.

Plant your own garden and water your own soil. Consult experts within reach, but work with your own spade.

Seasonable Work in the Amateur Greenhouse

GIVE genistas and azaleas plenty of water at the roots. Azaleas should be syringed daily. Fuchsias may be put away to rest.

Early-struck geranium cuttings should be potted in 2½-inch pots. Cuttings of lobelia, vinca and other plants suitable for window boxes may be taken at this time. These are often left until too late.

If you are growing Easter lilies, examine the tips of the growth frequently for aphis or green fly. Use a little dry tobacco dust or tobacco water as a remedy. Chrysanthemums should now be in their full glory. These and carnations are not easy plants for amateurs to grow. Nevertheless, a few of them are worth trying. The work of propagation should have been done long ago. If you have some plants of chrysanthemums, watch for the black aphis. Treat them with a weak solution of kerosene (a tablespoonful in a pint of water) or strong tobacco water. The latter is the safest and most effective.

Rubber plants, palms, dracænas and plants of that nature should have their foliage sponged once every two weeks.

CINERARIAS

This plant requires very careful treatment from the beginning; the most simple neglect may ruin its development. They require a cool atmosphere and plenty of top ventilation. Care in watering is necessary all through the period of growth. Do not allow the plants to become pot-bound until they are in the flowering pots. The greenhouse should be frequently fumigated to prevent injury to the plants from green flies.

PRIMULAS

The treatment required by these plants is similar to that of cinerarias, except that they may grow in a temperature a few degrees higher. Primulas, however, should be protected from strong sunlight with removable shading until the plants are hardened. The compost for the flowering pots should consist of good loam, leaf mould, sand and a good proportion of well-rotted cow manure.

A Home-Made Hanging Basket

NEW and novel designs in hanging baskets are welcomed by the amateur window gardener. One that is simple, pretty and inexpensive can be made at home. A little green raffia and a small basket in which figs are imported are all that is required, except a small brass curtain ring. From a recent issue of *Harper's Bazaar* we have taken the illustration on page 276. A writer in that magazine tells how to make the basket in the following words:

"Take 16 long strands of the raffia, double each one exactly in the centre, and after slipping them through the ring, take both strands and tie a single knot about an inch from the ring. Do this with each of the 16 strands. Take the left-hand one and the right-hand one from the next knot, and tie together one inch farther down. Continue to do this until all are tied. Then separate and proceed as before, thus tying your basket net until you have it a little deeper than the fig-basket. Then leave a two-inch space before you tie again. After this, braid the strands together so that you will have eight braided ones, which you fasten at the top, leaving the loose end for a tassel. Now your net is complete, and into it put first the little straw-colored fig-basket, then a finger bowl inside of that. This is to be filled with water, and hung in a sunny window with a spray of wandering jew or other plant adapted to the purpose." Make one yourself.

Forcing Lettuce

THERE are three essential points in the forcing of lettuce. First, the soil must be in suitable condition. Second, atmospheric changes must be controlled and obviated as much as possible. And third, the crop must be grown to maturity without a check.

More failures in growing lettuce under glass can be traced to unsuitable soil than any other one cause. A good soil for lettuce should be a rich, mellow, turfy loam of a sandy character. Head lettuce requires a lighter soil than loose or leafy varieties. All heavy soils should be avoided. A good compost for lettuce is composed of three parts of well-rolled sod mixed with one part of thoroughly rotted cow or stable manure, and enough sand to make it loose or gritty.

To grow the first crop, or that which comes into maturity about middle of November, will take about 10 weeks. The crops that follow, or midwinter crops, require about four weeks longer. If more houses than one are planted, or if a succession of crops are wanted, various sowings must be made accordingly. For a steady supply make a sowing every two weeks.

The most profitable variety to grow depends on the market available. It is very difficult to give advice on this point. If a head lettuce is required, Boston Market still holds its own. If loose or leafy lettuce is wanted Grand Rapids is the best. The demand is best and prices highest from January to April, so it will be well to have the heavy crops mature at that time, but growers must be guided by their market demand.

To be of the best quality, lettuce must be grown rapidly, hence nitrogen is needed. This element can be supplied in the form of nitrate of soda, one half ounce to a gallon of water, which will give good results. The temperature of the house should be kept as steady as possible. About 45 degrees at night and 60 or 65 degrees during the day with sunshine, and a few degrees lower in dull or cloudy weather. Air should be admitted on all favorable occasions, but never allow cold drafts to check growth or start mildew. Never allow the atmosphere to become close or stagnant. A great many failures to lettuce forcing is due to bad ventilation.

Unwholesome soil, insects and fungous enemies should be watched very closely. Green fly is very troublesome. If it once gets a foothold, it is not easy to subdue. If the house is kept too warm, it makes its appearance. Fumigating regularly with tobacco stems affords a good remedy. Look out for the lettuce rot. It appears in houses that are kept too close and wet. Give plenty of air and raise the temperature a little. Mildew can be kept in check with sulphur fumes, by painting the steam or hot water pipes at spaces of 10 feet apart. Mildew is caused by sudden changes in temperature or by drafts, and often by growing the plants too soft. If the soil is stirred frequently, and if there is reasonable care given in watering and in maintaining a uniform temperature, there will be seldom any trouble with mildew.
—L. H. W.

To count two white onions where one grew before is evidence of industry and thrift.

Growing Rhubarb Indoors

Thos. Delworth, Weston, Ont.

RHUBARB forcing is a simple operation, provided two or three essentials are observed; first, good, thrifty, vigorous roots not more than three years old; second, the best varieties, which are Linneaus and Victoria; third, propagate by dividing tested roots, as rhubarb varies so much from seed that it does not pay to waste time with seedlings. The writer has a batch now, three years old, containing perhaps 20 distinct varieties, and not one of the lot as good as either of the old varieties aforementioned.

When rhubarb is forced it is not fastidious as to the place it grows in. Under benches in the greenhouse, an empty root house, or a house built for storing celery in the early part of the winter will do, provided the atmosphere be humid and the temperature not less than 45 degs.; it may go up to 75 or 80, but 45 to 60 is perhaps most desirable.

Many growers prefer total darkness. From my experience, I do not think that it is important so long as the stalks are protected from the direct rays of the sun. On the other hand, light is not necessary.

Forcing rhubarb in the cellar under a dwelling house is, perhaps, the latest fad in amateur gardening. "Put a few rhubarb roots in your cellar and pull your own rhubarb all winter," they say. Market gardeners also are told, "Your cellar is pretty empty by the middle of February, fill up with rhubarb roots, get a good crop, no expense, and so on." It goes without argument that it would not work while other vegetables were stored there. Conditions that would make rhubarb roots grow would also make other roots, such as potatoes, carrots, and parsnips, grow and spoil them.

I have a poor opinion of the sanitary condition of a house cellar that is "admirably suited for rhubarb forcing" (humid atmosphere and a temperature of 45 degs. and upwards). If I had to live in such a house, I would want to open the windows and ventilators and make it *unsuitable* just as soon as possible.

A cellar for use as a store room for vegetables should be kept dry and cool, to say nothing of similar conditions being necessary for warding off the odor from decaying roots. Rhubarb roots decay quickly when forced. For several years I have forced several thousand roots every winter. They decay so quickly that I never attempt to make use of them after forcing. I throw them in a heap to make humus. An expensive feature is keeping up a supply of roots.

A Mammoth Squash Vine

A corner of a vine that sprang from one seed and covered about 800 square feet of area. An old standard winter variety, the Large Mammoth Yellow Squash, grown on the trial grounds of J. A. Simmers, Toronto.

The Value of Selection in Horticulture

T. G. Raynor, Department of Agriculture, Ottawa

THE accompanying cuts were reproduced from a photograph sent to Mr. C. H. Clark, Seed Commissioner, Department of Agriculture, Ottawa, by Mr. G. A. Robertson, a prominent fruit grower, who lives near St. Catharines in the Niagara peninsula. Mr. Robertson is enthusiastic about the value of selection in seeds as well as in live stock to the farmers of Canada. He believes that much of the farmer's success in future will be based on his ability to select and follow up that selection to its logical conclusion. We are just touching the fringe of discovery in the application of this principle to the development of farm crops, fruits and vegetables.

The conclusions of Mr. Robertson are based on his experience in growing tomatoes for a number of years. For commercial purposes he divides tomatoes into two classes, early and late. The late varieties have been well developed; they are heavy yielders and good in type, color and flavor. In these essential points, the late varieties excel the early kinds. The ideal that Mr. Robertson has been aiming to achieve is to secure these virtues in an early variety, knowing that if this could be done such a variety would prove a money-maker.

It is well known that late tomatoes usually bring 25 cents to 30 cents a

The Ordinary Earliana

Improved by Selection

bushel, while the early fruits of the earlier varieties often sell as high as $3.00 a bushel. These are usually from the early or first ripening clusters; while the later clusters ripen with the earlier clusters of the late varieties, and on account of their lack of shape and quality are sometimes unmarketable in competition with late varieties that usually are of better quality and more perfect in shape.

For a number of years Mr. Robertson has been trying such early varieties as Ruby, Dominion Day, Chalk's Early, Jewel and Earliana. Of these he has come to favor the two latter. The Jewel embodies most of the desirable features he is aiming at, but it is a little late in ripening. For the last three years, he has been working with the Earliana. Through careful selection he has secured a strain that has become quite fixed in character, and has most of the desirable features of the Jewel and is much earlier.

The illustrations speak for themselves. The original type of Earliana are those on the left. They show the deep creases, irregularity, lack in depth, and what is not shown in the cut, the unevenness in ripening. Those to the right are the Improved Earliana, the result of careful selection to secure the desirable qualities of smoothness, prolificness, even ripening, firm flesh, and early maturity. Such tomatoes will sell even in competition with the best late varieties.

"Often I have eight and nine good-sized tomatoes growing in a cluster," said Mr. Robertson. "My whole crop this year was much better than in any previous year in that the percentage of rough, flat, unmarketable tomatoes was greatly lessened, many vines having full crops without any ill-shaped fruits." So convinced is he that this work pays, that he is applying similar methods of selection for the improvement of other crops. He is sure to win. Experience counts, doesn't it?

How to Grow Good Celery

T. Benstead, Strathroy, Ont.

FOR the main celery crop, sow the seed about the middle of April. This is my practice. I have fine stocky plants by June 15. I lay my land out in beds five feet wide, raising them a little, with an 18 inch walk between; and then sow the seed in rows five to six inches apart. Shear the tops of the plants about twice, as that makes them grow more stocky; and plants treated this way do not sucker so badly as transplanted ones do.

We like to have our land manured and in good shape to receive the plants, working it thoroughly with disk and Acme harrows several weeks previous to planting time. We generally plant with a line in rows four feet apart with six inches between the plants. One man, with a boy to drop the plants for him, can plant from 9,000 to 10,000 a day. As to varieties we grow White Plume, Paris and Golden Heart.

A week after plants are set, or sooner if possible, we start to cultivate with a fine tooth cultivator, going as close to plants as we can without smothering them. When they are well established and have made some growth, we put a No. 8 Planet Jr. cultivator on, letting it run deep for two or three times, after which we ease upon the depth, but still keep on cultivating. I like to get through the patch twice a week.

After the celery has got large and we are afraid of too much root pruning, we "rub" the ground; that is, if the weather is dry, we make a tool the shape of the letter A, using planks, two by six inches. We put a bar across the bottom part to hitch whippletree to, joining it near the top with a second cross bar attaching two cultivator handles which are braced. Leave the top open for the earth to pass through. I find this a fine tool in dry weather, as the capillary power is pretty strong at that time and the crop is evaporating a lot of moisture; so, in keeping the pores of the surface soil closed by "rubbing," we get ahead of capillarity.

Celery 2½ Feet in Height

As soon as I notice any blight spots on leaf, I dust with air-slaked lime and a little sulphur, in proportion of about eight to one. With me, this treatment controls the blight. I use plenty of wood ashes and salt on the soil, which, I think, helps to prevent a bad attack of the disease.

Rottenheart in Celery

"I think the main cause for 'rottenheart' in celery is in poor selection of seed," said A. McMeans, O.A.C., Guelph. "The seed man himself is not careful in selecting from plants with sound stalks; and the retail buyer does not take proper precautions in selecting seed of good quality.

"I have bought seed from different firms, and planted them on the same soil, at the same time and under the same treatment; and while some of the celery produced was practically free from rottenheart, other portions would run as high as 10 per cent. of diseased stalks. You cannot be too careful in the selection of celery seed."

The decay of a single specimen in the bunch or storage pit may be communicated to and injure the rest.

If market gardeners would pick out the best potatoes to plant for producing seed for the following year there would be no need to go to New Jersey or any place else for seed potatoes.—Jas. Dandridge, Humber Bay.

We grow rhubarb under the benches in the greenhouse. The roots are dug late in fall before the ground freezes, and hauled to the door of the greenhouse and piled. About February 1 we commence putting them inside. This is continued until about March 15. In three weeks to a month from the time they are housed they will be ready for market.—F. D. Ghent, Burlington, Ont.

I start to prepare the compost for mushrooms about December 1. The bed is commenced about December 10 and finished about January 1. I cut the first mushrooms about March 1. The dates mentioned are later than the usual custom. A bed can be started in November.—T. Delworth, Weston, Ont.

OUR QUESTION AND ANSWER DEPARTMENT

Readers of The Horticulturist are invited to submit Questions on any phase of Horticultural work

Unhealthy Pewaukee Trees

I have a young orchard of Pewaukee apple trees just starting to bear. This season some of trees look shaky, the leaves have a white, glazy look, and the apples are water-cored. They have been well cared for, but not sprayed. Will you suggest a remedy?—H. C. G., Marchmont, Ont.

The Pewaukee tree is not one of the hardiest varieties, although it is comparatively hardy. In severe winters, this tree is often injured in the colder parts of the country. The white, glazy, or silvery-like appearance which the trees take on is, I believe, the result of certain forms of winter injury. The Pewaukee apple does not often water-core, but the tree being in an unhealthy condition might induce this. Some varieties of apples are much more subject to water-core than others, and in certain seasons, it is more pronounced than in others. At Ottawa, we noticed more of it this year, owing, doubtless, to the extremely dry weather that we had.—Answered by W. T. Macoun, Horticulturist, C.E.F., Ottawa.

Planting Small Fruits

Is the month of November too late for transplanting currant and raspberry bushes?—F. P. W., Toronto.

Currant and raspberry bushes may be transplanted in November as soon as the foliage is off. A few years ago we set out a large plantation of currants on November 8 and 9, and did not lose a plant. Raspberries are not so hardy, and I doubt if they will stand this late transplanting so well as currants.—Answered by Prof. H. L. Hutt, O.A.C., Guelph.

The Apple Maggot

A pest called the "Railroad Worm" is eating the heart out of my apples. In some orchards it is doing much damage, and appears to be spreading rapidly. What is the nature of the pest, and how can it be combatted?—A Subscriber.

The Railroad Worm, or more properly the Apple Maggot (*Trypeta pomonella*), is a serious pest and is becoming numerous in orchards, particularly in Quebec. The maggot is the larva of a fly. It burrows through the flesh of the apple, feeding upon the pulp, and making channels in every direction, causing the fruit to rot or become unsaleable.

The only effectual remedy is the prompt removal and destruction of infested fruit. Windfalls should be gathered and destroyed at once. A complete description of the insect and its work, with remedial suggestions, may be found in the 1904 and 1905 reports of Dr. Jas. Fletcher, Dominion Entomologist, C. E. F., Ottawa.

Scale on Palms

The leaves of my palms are covered with little round light colored scales. What shall I do for them? The scale collects more in the axils of the leaves than near the ends or tips.—E.G., Port Dover, Ont.

Dip the plant in strong soap-suds and allow it to remain for about half an hour. Then wipe off the scales with a sponge. When submerging the plant, lay it on its side to avoid having the soap drain into the soil. A method, without dipping, is to rub off the scales with a stiff brush kept moist with soapy water.

Hercules Club

What is the Hercules Club? Mention its height, habit of growth, hardiness, culture and value.—C. E. V-D., Grimsby.

The Angelica Tree, or Hercules Club, *Aralia hispida*, is a native of the southern and south-eastern states, and becomes a small tree there, the extreme height being about 40 feet, although the average height is much less than that, probably not more than 20 feet. This tree is quite ornamental. It has large compound leaves from two to two and a half feet in length; when the tree is well developed, these give it an umbrella-like appearance. It is a very prickly tree; owing to this peculiarity, it makes an interesting specimen on a lawn. This tree has not proved hardy at Ottawa, but in the warmer parts of western Ontario it might succeed fairly well, although it would probably kill to the ground from time to time.—Answered by W. T. Macoun, Horticulturist, C.E.F., Ottawa.

Not Poisonous

Recently the Buffalo *Express* stated that the covering of the Tussock Moth cocoon is a deadly poison, and that bits of it, blown about in the air and lighting on the skin, causes annoying irritation. Is this so?—Mrs. T. S. P., Yarmouth, N.S.

I have never experienced any irritation from the Tussock Moth in any of its stages, nor have I heard complaints of the annoyance. I have, however, seen a mention in an entomological work that irritation has been caused to the skin by the hairs of the caterpillars, but no particulars were given.

The Brown-tail Moth, which is such a grievous pest in Massachusetts, is a very serious trouble in this respect. Parts of the body of the caterpillar are clothed with barbed hairs. These are woven into the cocoons, and when thus removed from the body of the living insect become dry and brittle. The barbed particles, dislodged from the cocoons by wind and weather, are blown about, and when they come in contact with the skin, produce extreme irritation and soreness. These effects are entirely mechanical and are not caused by any poison.

The white covering of the eggs of the Tussock Moth does not become loose or blow about in the air. It is an adhesive covering which remains as a protection to the eggs till the larvæ are hatched. By no means is it a "deadly poison."

In Canada there are one or two other caterpillars, not common species, which are armed with barbed spines. If incautiously handled, portions of these spines may penetrate the skin and produce an irritation similar to that of the stinging nettle.—Answered by Dr. C. J. S. Bethune, O.A.C., Guelph.

Storing Beets and Carrots

How and where should beets and carrots be stored? Does frost hurt them?—A. H., Collingwood, Ont.

It is advisable not to let frost touch the beets. It takes away the color, and an excess of frost will cause them to rot. Store in a cellar that is dry and cool, and where there is no danger of freezing. Beets should keep until the new ones are ready in the spring.

Treat carrots much the same as beets. If the cellar is not cool, see that the carrots are not piled too deeply or they will heat and rot. In a good cool cellar they can be piled to a height of three or four feet. If the cellar is at all warm, it is necessary to mix sand or light loam with the carrots in the pile.

Wintering Onions

Can onions be stored in a shed and allowed to freeze?—N. A. S., Burford, Ont.

Onions for winter use should be stored in a cool, dry cellar on slatted shelves, where there is plenty of ventilation. They should not be allowed to freeze. A temperature just above 32 degrees suits them best. Onions for spring sales may be stored in a shed or barn, allowed to freeze solid, and then covered with hay or straw to a depth of a foot. Leave them untouched until the frost is entirely drawn out in spring.

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SOMETHING SHOULD BE DONE

It is time the Dominion Department of Agriculture took action to afford greater protection to fruit growers and other producers whose products are sold in the markets of Great Britain. The government has done excellent work in the direction of improving the cold storage facilities on the railway and steamship lines, but this is not enough. Its care should follow the products until they are in the hands of the consumers.

Take the case of apples forwarded to Great Britain on consignment to be sold by auction. Should the steamer carrying the apples reach the market at a time when there was not much fruit on hand, the apples, if in good condition, sell for a satisfactory figure. Should, however, several vessels, either from Canada, the States or elsewhere reach port about the same time, a glut occurs. The result is that the apples are sold at a loss. Some means of regulating the quantity of Canadian apples placed on the market each day is required. Were the government to place a competent man in a market such as London, and give him the assistance he would require, it would be possible for Canadian growers to consign fruit direct to him. This fruit could be turned over to reliable auctioneers immediately, should the market seem favorable, or it might be held in cold storage until any temporary surplus in the auction rooms had been absorbed. In this way many thousands of dollars could be saved for our Canadian growers. It might, even, be possible to arrange for buyers to visit the warerooms, examine samples of the fruit and make purchases at first hand. In cases where growers shipped fruit direct to dealers or commission houses, it would be possible for them to arrange with the buyers that, should they find the fruit in a damaged condition on its arrival, they would have to call in the government representative and secure a report from him to that effect before they would have the right to make deductions in the price agreed on for the fruit.

Were he of the right stamp, such a government official would be able to advertise Canadian fruit to excellent advantage. He could gain the confidence of the buyers in the quality of the fruit and thus help to increase the demand. These are only suggestions. Some of them may be impracticable. Something of this kind, however, should be done and done soon.

It may be argued that this is a matter for private enterprise. The trouble is our apples are consigned in such small quantities it is not possible for individual shippers to make arrangements such as those outlined It is encouraging to note, however, that the aims of the recently organized Ontario Cooperative Fruit Growers' Association includes the placing of representatives in the British markets.

What is needed is that our growers shall have some assurance that their fruit when it reaches Great Britain is sold to the best advantage, that steps be taken to prevent growers being defrauded by untruthful reports concerning the condition of their fruit, and that our fruit be more widely advertised in the leading markets of the Old Country. This is a line of work that should be handled by the Markets Division of the Dominion Department of Agriculture, rather than by the Department of Trade and Commerce. The agents of the latter department are expected to look after everything from pig iron to matches. What is required is the extension of the work of the markets division, whose employees now watch the condition of the fruit until it is unloaded from the steamers on the other side, by the appointment of some man in whom fruit growers will have confidence, whose duty it will be to attend to such matters as we have here suggested. Dairy Commissioner Ruddick, who is supposed to look after the interests of the fruit growers, would do much to gain the confidence of fruit growers in his ability to assist them, were he to take action in this matter.

GET BUSY NOW

There are a number of towns and villages, and even cities, in Ontario where there are no horticultural societies. In almost every case these centres show a civic lack of the love of the beautiful in nature that is seldom evident where a horticultural society exists. While each of them have some citizens who take a pride in keeping their homes beautiful with flowers and shrubs, the proportion of attractive homes is seldom as large in centres without horticultural societies as is the case in other places where these societies play an active part in promoting a greater appreciation of municipal æsthetics.

During the past season a visit to the town of Strathroy, where a live horticultural society exists, revealed the fact that its homes were something of which to be proud. House after house, block after block, and street after street revealed homes with nice lawns and gardens and flower beds. Lovely evergreen hedges in many cases were the only form of fence used. Where lack of ground made a garden impossible, a glance was almost sure to reveal flowers in the windows or on the doorsteps. In the town of Carleton Place, which is about the same size as Strathroy, but which is without a horticultural society, the same conditions did not prevail. While Carleton Place has some lovely homes, and in writing thus we hope it will be understood that we are expressing the views of a lover of horticulture to whom even a cottage is lovely if it has flowers and vines—they were the exception rather than the rule. A considerable proportion of the houses had no grounds in front. In the case of others, fences were all that divided lawns and gardens that showed the lack of care. Window boxes were an unusual sight. In a few years a live horticultural society, through lawn and garden competitions, the distribution of plants, flowers and seeds to its members and to the school children, as well as by public exhibitions, could work a wonderful improvement in Carleton Place.

There are many other places like Carleton Place, which need horticultural societies. Pembroke, Arnprior, Alexandria, Cornwall, Morrisburg, Brockville and Gananoque, are a few in that one small section of the province east of Kingston. In some of these the formation of horticultural societies has been blocked in the past by the agricultural societies. This source of opposition has been removed in the new act governing horticultural societies, as in future horticultural societies will receive their grants separate from agricultural societies. Surely there are enough lovers of nature in progressive centres such as these, with sufficient public spirit to lead them to take the few simple steps necessary to launch a society.

If you would like to form a society now is the time to start work. A little delay now may make it impossible to do anything for another year. The act governing horticultural societies requires that new societies must complete organization by about the middle of January or they will not be entitled to participate in the government grant. You should, therefore, start work now. Talk the matter over with a few of your friends, interest your local editors, and finally ascertain how many people will be willing to pay one dollar to join the society for a year. If there are more than 200 ratepayers in your town you will have to secure 50 members, but if the number of ratepayers is less than 200, then 30 members will be sufficient. Get these people to sign a petition for the right to form a horticultural society and send it to the Department of Agriculture at Toronto before the first of the year. You will then be given permission to hold a meeting for organization purposes, after which you will have a horticultural society which, if conducted on right lines, will result in untold good to yourself, your fellow-citizens and your town.

DISSATISFACTION PREVAILS

The manner in which the express companies of Canada have handled the tender fruits during this season is deplorable. The fruit grower in most localities is at the mercy of these companies. On innumerable occasions fruit has been refused for lack of car room and made to lie for hours in the sun waiting for a train. The fruit deteriorated and the grower lost money. In most instances there is little or no chance of redress.

Besides lack of car space at the proper time, the express companies have failed at times to dispatch fruit that was delivered at the stations, even though there was plenty of room. The Horticulturist can cite cases where fruit, consigned to northern points, lay at Toronto express offices for hours. These companies do not employ enough men. They will not pay decent wages. Employees are forced to work harder than they should. With only half a staff of employees it is no wonder that the companies fail to dispatch fruit. While both companies operating in Canada are lax in this respect, the Canadian Express Company is most at fault. Many complaints have reached this office respecting the carelessness of this company in particular.

This is work for the Railway Commission, through which fruit growers can now take action. Examples of the loss caused growers by neglect of this nature should be brought to the attention of the commission. It will be the quickest method of bringing about an improvement.

ATTEND THE EXHIBITION

There is no place where a person interested in horticulture can spend a few days early in November to greater profit than at the Ontario Horticultural Exhibition. In no way can he better learn to distinguish one variety of fruit, flowers or vegetables from another, or to get a correct idea of what constitutes a first-class specimen. Those on exhibition are the choicest specimens. They may be considered even better than what is commonly known as first class. The proper methods of packing, also, may be learned. There are many things that are worth seeing and observing.

Besides what may be acquired through observation, visitors have the opportunity of talking with the prize-winners and obtaining pointers on the manner in which they produced the fruit, flower or vegetable that won. By conversing with exhibitors, the grower may gather information, also, in regard to the habits of various varieties, as to whether they are productive and hardy, what their weak points are, and what the strong ones. Attend the conventions, hear the addresses and take part in the discussions. Growers and lovers of horticulture, amateur and professional, should not fail to come to Toronto for the Ontario Horticultural Exhibition. The date is November 6 to 10—five days.

THE SEEDLESS APPLE

As we feared would be the case, the report of the Hon. John Dryden on the Spencer Seedless Apple, that appeared in the last issue of THE CANADIAN HORTICULTURIST, is being quoted in a manner intended to mislead the unwary. Read this from the *Watchman-Warder*, Lindsay:

"The trees are being introduced into Ontario and are highly recommended by the Hon. John Dryden and other prominent agriculturists. Mr. Dryden, who made a special visit to Mr. Spencer's orchard, says the apples are seedless, the trees vigorous, early and heavy bearers, and in his opinion will do well in Ontario. The apples are sure to command a high price for their many excellent qualities."

A recent issue of *The Glengarrian*, Alexandria, said:

"It is a choice apple with a delightful flavor, and has no core or seeds. Hon. John Dryden recently made a personal examination of the trees and fruit and gives a favorable report of the results."

Those who note the reference to a "delightful flavor" and have read the remarks on this point by Prof. John Craig, of Cornell, that appear on another page, will see how misleading the statement is. Again we warn the fruit growers of Canada to be cautious in taking hold of this variety.

The San Jose scale is spreading in Ontario. Evidence of this is furnished continually. The Provincial Government was approached recently by growers in Harwich township, Kent county, and asked for relief. Scale is now found, also, on apple trees in the vicinity of Tillsonburg. Growers in these sections and in others to which the scale has spread have not done their duty. They have not taken steps at the beginning to check the pest. Two government experts are going into the district to conduct spraying operations. Meetings also will be held. These things are all right as far as they go but they are not enough. The growers themselves should make a determined effort to control the spread of this pest. They should not wait until their orchards are almost destroyed before making the effort. This is the cause of the anxiety in Kent county. Growers there devote most of their attention to vegetables, beans in particular, and neglect the fruit orchard. As a result, the scale has made much headway without being noticed. Growers everywhere should be on the watch. There is no reasonable cure for the pest other than spraying. It behooves growers to be up and doing. Every man in scale-infested districts should spray. Those who refuse ought to be made to do so by law. No one should be excepted.

We would compliment the Ontario Fruit Growers' Association on the excellence of the program that has been prepared for the annual convention this fall. The elimination of a medley of topics on cultural directions is a good move. The subjects selected for discussion are of a broader and more general nature. There are just enough addresses on cultural matters to lighten the more heavy features. The details of orchard management are better discussed at local meetings in the various fruit districts. The convention program this year is the best yet.

As yet there has been no discussion on the manner in which the new experiment station in the Niagara district should be controlled. This is a matter for serious consideration on the part of the fruit and vegetable growers and all factions interested, directly or indirectly, in the future of the new station. A wrong move at the beginning may hamper the afterwork and value of the farm. As a basis for discussion we would suggest that the station be placed under a board of five members, to be appointed, one by the Ontario Fruit Growers' Association, one by the Ontario Vegetable Growers' Association, one by the Ontario Agricultural College, and two representatives growers by the Minister of Agriculture.

The "plugging" of apples in barrels is something for which the fruit inspectors should be continually on the watch. Plugging is the practice of opening barrels that contain apples more or less decayed and substituting sound apples for the bad ones that are found on the face. It is a means of deceiving the buyer and the fruit inspector. In a word it is one form of robbery.

Fakirs usually are caught by their own schemes, some time, some how. Few "get-rich-quick" games can be played forever. The schemers behind them soon expose themselves and from then on are not to be trusted. We have been caught once or twice, and now are taking special care to see that the advertisers in THE CANADIAN HORTICULTURIST are worthy. Readers may deal with them and feel that they are going to get a square deal. Consult the advertising columns in this issue.

Fruit Growers' Program

Addresses by leading horticulturists in Ontario will be delivered at the annual convention of the Ont. Fruit Grs. Assn. in Toronto, Nov. 7 and 8. It is expected, also, that Mr. Roland Morrill, of Benton Harbor, Mich., one of the most successful peach growers in the U.S., will be present and speak on "Low-Headed Peach Trees." The secretary is corresponding, also, with Mr. R. W. Shepherd, of Como, Que., for an address on "Heading Back Injured Apple Orchards." While other features may still be added, the following is the program as assured to date—it is furnished by P. W. Hodgetts, sec., O.F.G.A.:

WEDNESDAY, NOV. 7

9.30 a.m.—"Work of the Association for 1906," Jas. S. Scarff, Woodstock; Appointing of committees; Report of Committee on New Fruits.

2.00 p.m.—Dominion Conference of Fruit Growers; "Immediate Results," W. H. Bunting, St. Catharines; and "Future Work," A. W. Peart, Freeman; "Fruit Statistics," C. C. James, Deputy Minister of Agr, Toronto; Report of Committee on Revision of Constitution.

8.00 p.m.—"Low-Headed Peach Orchards," speaker from the U.S.; "Heading Back Injured Apple Orchards," speaker probably from Que.; "Fruit Laws, Provincial and Federal."

THURSDAY, NOV 8

9.00 a.m.—Elections of Directors; "Future of the Apple in Ontario," A. McNeill, Chief, Fruit Division, Ottawa; "Markets of the Northwest": "Tender Fruits," Robt. Thompson, St. Catharines, and "Apples," A. E. Sherrington, Walkerton.

2.00 p.m.—Report of Transportation Committee; "The Strawberry," W. F. W. Fisher, Burlington; Report of Cooperative Committee; "What the Fruit Shipping Associations are Doing," 5 minute reports from 18 points in the province.

A neat and well-prepared catalogue of bulbs for fall planting is that issued by the Wm. Rennie Co., Limited, Toronto. It tells not only what to plant but also how to do it. Send for a copy.

Fruit Growers at Oakville

The Oakville Fruit Growers, Limited, one of the enterprising cooperative fruit associations of Ontario, opened its new and substantial fruit house in a pleasant and interesting way. Invitations were issued for a luncheon on Oct. 11. One of the capacious apartments of the fruit house was set apart for the occasion. A judicious arrangement of evergreen boughs about the room and carnations in vases, ferns and asparagus plumosus on the tables made a pleasing effect.

After luncheon was served, an interesting program of toasts and speeches was enjoyed. At the beginning, letters of regret were read from Hon. Sydney Fisher, Hon. Nelson Monteith, Mr. Alex. McNeill, G. C. Creelman, P. W. Hodgetts and others. The president of the Oakville Assn., Mr. W. H. McNeil, graciously announced the various toasts. In responding to "The Fruit Division," Mr. P. J. Carey, D.F.I., contrasted the methods of handling fruits in the past with those of to-day. Then, apples were always bought by the lump, the buyer took everything and the grower got low prices. The packing was bad, the main point often was to make a No. 3 apple look like a No. 1. A fair apple year was then thought to be when there were enough No. 1's to face the ends of the barrels. In the past, it was impossible to trace fraudulent dealings, as fictitious names were the rule. To-day, fruit is picked in season. Good and correct brands are used (in this connection the speaker complimented the Oakville Assn. on having a brand that is almost faultless). Now, the correct name and grade mark must be placed on the barrel. Growers to-day can hold their fruit until the market is favorable. Mr. Carey also spoke of the prospects for trade in the west. He said that there is no chance of apples ever being raised in Manitoba, commercially.

In response to the toast to our "Sister Organizations," Mr. Robt. Thompson, of St. Catharines, spoke of the good work being done by his association and by the cooperative movement in general. He said that the day of the commission man is past, as these associations can hold their fruit and largely control prices. The future of fruit growing is bright. The west wants our fruit if they can depend on the pack; confidence is gradually becoming established between western buyers and Ontario growers. The bad packing of Ontario fruit has been exaggerated. Mr. Thompson said, also, that the railroads of this country are not giving good service. For the western market, U.S. companies do better. If Canadian railway companies will not give the required service, it will be necessary for Ontario growers to ship via U.S. lines.

The toast to "Transportation" was responded to by Mr. H. W. Dawson, of Toronto. He said that the greatest difficulty in the way of success in fruit growing is in the matter of distribution. Fruit men send too much to one market at a time, while others have nothing. This illustrates the value of cooperation whereby the full and empty markets may be located. Mr. Dawson said that he would sooner pay more money for apples packed in a central packing house on the cooperative plan than for those packed in the orchard. He referred also to the dissatisfaction that has been felt this season with respect to the express companies. While the Dominion Express Co. has given the better service of the two, neither has made any attempt to carry fruit as it should be done. Shipping by express is a poor way of handling fruit. It is better to ship by freight whether in carloads or small lots.

Various other toasts were proposed and responded to. In the course of some general remarks, Mr. Herbert Inglehart, of Merton, spoke highly of THE CANADIAN HORTICULTURIST. He advised all the fruit growers present to become subscribers. THE HORTICULTURIST is a paper for Canadians.

Earl Grey and his son, Lord Howick, were so much impressed with the Nelson, B.C., fruit lands that each has purchased a small fruit ranch of about 30 acres.

Prince Edward Island Letter

Rev. Father Burke, Alberton

The round of exhibitions for this autumn is about complete. It has been wonderfully well sustained. The fruit end of the fairs, however, especially of the earlier ones, is generally disheartening.

On the Island we have a later fair than usual. The earlier varieties are therefore not much in evidence; generally they are the chief factor in the attractions. This year the big red varieties of fall apples are multiplied *ad infinitum*. Alexanders, Wolf Rivers and Duchess filled many tables. They made a pretty show.

On account of the peculiar season the late varieties are miniature, not full grown, in many instances, and we haven't many of them. Still, they looked fine on the tables, and give one the impression of a thoroughly fruit-producing country. The bloom on those apples surpassed anything I have ever seen. They were a picture of loveliness.

This is not a plum year either, although we wouldn't know it from the exhibits. The whole range of this luscious fruit was exposed to our admiring gaze. The flavor was surpassingly exquisite.

Mr. R. W. Starr, the veteran pomologist of N.S., was the judge again. Old as he is, and deserving of a rest, he revels in adjusting Island awards, and his judgments are just.

At the show and within the charmed fruit circle, with its apples, its plums, its pears in quantity, and its grapes in rarity, Mr. C E. Stewart, of Oregon, talked to the fruit men modestly and honestly about packing in boxes; and demonstrated in the art before their interested eyes. He hadn't the proper packages, or wrappers, but did his best. There is always some *faux pas* or other with government-supplied experimenters. The men cost high, and the little, comparatively inexpensive material to work with, is generally wanting. Some day we will strike the provident official and marvel at it.

We found out, however, that Mr. Stewart favors generous inspection. He packs apples even with greater variety than Mr. Boies, and packs the boxes to be opened on the side. "The best side to London," is now anything but the top-side. Something new is learned every time the stranger gets within the gates.

The fruit show at Charlottetown had many defects in its arrangements. Some people have a wonderfully wise way of undertaking things they know nothing at all about. Some exhibition commissioners are marvels in this line; still they handicap important industries awfully by their presuming.

Our Richard Burke, D.F.I., is sick unto death, it is to be feared. He was a faithful friend of horticulture. Who can replace him?

Fruit Scenes at Montreal

E. H. Wartman, D.F.I.

On September 19, 1906, I noticed some barrels marked No. 1 Spy. "What," said I, "Spys at this early date—can it be possible? They are good hangers, so why not left to mature and color?" The first opened was found to contain 11 specimens, nearly rotten. This proves that apples not properly matured will rot much quicker than those well matured. What did I do in this case? Why, I marked them "falsely marked," of course, as No. 1 Spy means sound specimens.

Another scene comes to mind of a different character: A sling carrying 6 bbls. of apples was elevated; it slipped, the rope was pulled off the bbls. and down the hold of the steamer they went, a distance of 20 ft. Of course they were badly smashed. The man to blame came to me and wanted to know if they could not be repacked. I said it would not be a proper thing to do, as they were too badly damaged.

Scene 3.—On a load of apples approaching a shed, I noticed several bbls. plastered with mud. Ascertaining what had happened, I found the team had got stuck in a mud hole; in starting, several bbls. fell off in the mud, and were rolled around until they were fairly coated. A clean parcel is always preferable in our English markets. "But," you say, "accidents will happen." Yes; but, in many cases, carelessness is at the bottom, and our fruit men have to suffer.

Scene 4.—Several bbls. of apples rolled aside and the heads were broken. The bbls. lacked from a peck to a ½ bu. when the cooper headed them up. Of course he did not know where the apples had gone, but you had only to look around and see the abnormal grown pockets in the coats of the helpers to prove the slackness of the bbls. These scenes are not pleasant or profitable for a shipper; but seems fun for a few, lunch thrown in.

During last season's inspection, 81 varieties of apples came to my notice. As there are at least 81 kinds of people in this world, surely that number of varieties should be sufficient to satisfy the most fastidious as to taste, color, size, etc.

The shipments of St. Lawrence apples, so far, show signs of overripeness and decay in many cases. Snows, showing spot when packed, have also arrived in a condition so bad that 75 cts. would be about the highest bid at our auctions for same. Imagine how disreputable they would look on Old England's markets! To a Canadian, across the water, it would be humiliating to find "Canadian" marked on such poor specimens On the whole, however, this season, we find many packers putting up a very creditable parcel; and, no doubt, such will meet a quick and profitable sale.

The Winnipeg Market

The more study is given to the fruit situation in Winnipeg the more it is apparent that a great market is before the Ontario growers. To gain and to hold this market, however, several important essentials must be studied and practised. Good fruit is required and the top price can only be obtained continuously by putting it up neatly and in a uniform package. As one dealer in the city puts it, "They must adhere strictly to the Fruit Marks Act." By adhering to the Fruit Marks Act and sending only the best of their crop it will not be long before Ontario growers will have a very profitable market for all the fruit they can produce.

Frequent discussions with commission men show that they want a uniform package. In the commission business it is desirable, while in the retail windows a much better display can be made if only one style of package has to be used.

Then there is the question of marking the package. California fruit men built up a huge trade and every package bears a bright, clear stamp. British Columbia growers are following suit and find a ready sale for their crops. In some sections of Ontario marking is becoming general. If a man has good fruit he can't mark it too plainly; if the fruit is not good, and he must ship it, by all means keep the mark off, if any regard is held for reputation as a fruit shipper. The commission men like to see a standard brand on packages from a company or an individual. The purchasers, if they get good stock once, recognize the brand ever afterwards, and will pay the top price for it until they run across a lot of cheap grade stuff bearing the same stamp.

In Winnipeg, as in the Old Country, the consumers are after something showy. They will pay high prices for almost any apple if high colored. Russets as a rule bring a low figure. Apples and pears, the dealers claim, should be picked well on the green side, because many of them are held for reshipment to towns throughout the west. Ontario peaches go on the market in fair shape if put up properly in small packages, not more than two layers. Those who claim to know say they should be picked slightly greener than for the Montreal market

Many tomatoes reach Winnipeg altogether too green. Sales during the past season show that more profit can be reaped by packing the tomatoes in trays of 4 bskts each than by putting them in 11-qt. bskts The trays hold about the same quantity but sell readily at 12 or 15 cts. higher. Besides selling higher it tends to keep up the price for the 11-qt. basket.

Fruit growers cannot be too strongly impressed with the fact that the western consumers will pay for the right article. The average citizen wants the best and expects to have to pay dear. A little study and a little more cooperation will be sure to result in great things for the fruit growers of Ontario.—J. A. H.

Vegetables in Alberta

Fred. Bennett, Edmonton

In Alberta, foremost among vegetables is the potato. In a bag brought to my house recently, variety Early Rose, there were many tubers weighing from 2 to 3 lbs. each, and probably considerably more. The skins are soft, and they would have grown much bigger had they been left in the ground. There is no trace of rot or hollow centres in them, and one of the big potatoes is sufficient for a meal. There are plenty of stories going around of tubers weighing up to 8 or 9 lbs. I have never seen them that size, but the reports seem to be authentic. One gentleman told me that he had some even bigger and did not like them as well as the smaller sizes. He told the farmer who brought them that, if he could not supply him with medium-sized tubers, he was not to bring any more. For myself, I may say that the flavor and quality of any of them seem to be all that can be desired.

In one of the local gardens I saw some cauliflowers grown from English seed—some variety of Sutton's, I believe—that measured 18 inches across, and they were as white and as solid as a ball. The big English marrowfat peas are grown here in several places; and, if the size of the pods are an indication of the size of the peas, they are wonders. Tomatoes do not ripen here unless they can be got to a good size before planting.

Nova Scotia Letter

G. H. Vroom, Middleton

The Gravenstein crop has been gathered and nearly all sold, some going to England and the balance to the local trade. The quality was poor, not more than 20% No. 1. Specimens with black spot are decaying rapidly, clean stock is keeping well. Late fall and winter varieties are clean and well colored and are going forward in good condition. A heavy wind on Oct. 7 blew off a lot of apples. In exposed places 25% of the ungathered crop was shaken down.

Prices for good, clean winter stock range from $1.75 to $2.25 a bbl., according to variety for packed fruit, and from $1.25 to $1.75 for tree run delivered at the fruit house. Growers and dealers have fallen in line with the amendments to the Fruit Marks Act. The use of X's has been discontinued in nearly every case, and the No. 2 definition is working well. Plums were a light crop and prices ran as high as $3.50 a bush. Pears were a moderate crop and prices are good. Cranberries are a fair crop and the quality is fine, ensuring good prices.

British Columbia Letter

C. P. Metcalfe, Hammond

The hort'l exhibits at the New Westminster Exhibition were of better quality than last year though somewhat deficient in quantity. The greater part of the upper floor of the agric'l building was devoted to apples, of which the display was very large. The entire space in 2 of the wings, and half that of the third, was allotted to the apples, the other fruits occupying the other 1½ of the wings. There were 12 district exhibits in competition for the Delwar shield, 9 from B.C., and 3 from Alberta. Together they made a magnificent showing of the products of the West. Chilliwack took first place, with Langley (last year's winner) a close 2nd. The competition in the commercial exhibits of packed fruit for the Oscar Brown Cup

was very keen. The cup went to Mr. Thomas Earl, of Lytton. The coloring of the commercial exhibits was considerably better than last year, and the packing was a magnificent demonstration of the art.

The Government has procured 2 of the largest exhibits, Mr. Earl's, of Lytton, and that of the Coldstream Ranch of Vernon, comprising some 120 boxes, to be exhibited at the big exposition to be held shortly at Christchurch, in New Zealand. Mr. A. McNeil, Chief, Fruit Division, Ottawa, has been paying the Pacific coast a visit and assisted Mr. Burrell in the judging of the fruit at the Westminster Exhibition. While here he visited various points throughout the province and held informal meetings with the fruit growers.

Careful Fruit Packing

A box of Spy apples packed by J. F. Brennan & Son, formerly of Grimsby, Ont., is represented in the illustration. The size of the box shown is 22 x 11½ x 10½, and it contains 60 apples. Brennan & Son did not favor the change in the dimensions of the Canadian box for two reasons: first, they claim that it caused confusion in the minds of customers as to size and number of apples in a box, and second, they could send the larger box to the United

A Box of Spys

States for the same duty as was demanded for the smaller.

Each box sent out by Brennan & Son is neatly labelled. No excelsior is used when apples are wrapped. When packed solidly they ship in good condition. It pays to pack correctly and to pack only the best.

An excellent fertilizer for the orchard and garden is gypsum or land plaster. While not a direct plant food in itself, it has much value in liberating plant food in the soil, particularly potash and phosphoric acid. It may be used with particular advantage for leguminous crops, such as clover, beans and peas. In orchards where cover crops are grown, land plaster is a useful fertilizer. Its incorporation in the manure pile will fix the ammonia and prevent its escape. Gypsum spinkled on the cut surfaces of seed potatoes is beneficial; it increases the crop; experiments at the O.A.C., Guelph, have shown this. All fruit and vegetable growers should have a supply of this material on hand. The best grade is put up by the Tobique Gypsum Co., Plaster Rock, N.B. It is finely ground. The F. C. Terry Co., 31-41 George st., Toronto, handle the goods in Ontario.

Horticulture at the Halifax Exhibition

THE fruit exhibit at the Dominion Exhibition, Halifax, was a great success, and reflected much credit on the energetic Supt., Mr. J. W. Bigelow, who has had so much experience with exhibits of this kind both in N.S., and at the large exhibitions in other parts of the world. There were 3,601 plates of fruit shown, and 725 jars and bottles. These made a magnificent display. Interspersed with the fruit were palms and ferns, loaned by the Nova Scotia Nursery Co., and these, with the many flags used by the Supt. to decorate the building, added much to the attractiveness of the hall, and suggested to the writer the advisability of having some similar arrangement at the fall fairs in Ontario where, as a rule, little is done to make the fruit exhibit attractive to the general public.

While the exhibition at Halifax was a Dominion one, with the exception of the province of Ont., there was little competition outside N.S. The writer believes that under the present arrangement the exhibits from the outside provinces at Dominion exhibitions mislead the general public and even the fruit growers themselves, and do not fairly represent the kind of fruit the different provinces can produce. I believe that something should be done in the future by some organization in each province to ensure the exhibition of a first-class collection of fruit, so that the competition for the Canadian or provincial prize would be put on a better basis. This year there were only 2 exhibitors competing for the special Canadian prize of $50.00 for the best collection of fruits and berries from N.S. and from Ont. The first prize was lost by Ont. partly from the fact that no berries were shown in bottles. Even if berries had been shown, Ont. would have lost as, while the exhibit scored higher than that from N.S. in peaches and grapes, the exhibit of apples was behind that from N.S; although the individual specimens were good, and the fall varieties of fair color, the winter sorts were off color, and gave the impression of having been picked a long time. Ont. could have beaten the N.S. exhibit which was shown if a greater effort had been made; as it is, N.S. will get the credit, which really belongs to Mr. A. C. Starr, Starr's Point, whose energy in getting the exhibit together was rewarded. The exhibits from the provinces of Que., N.B., and P.E.I., were not what they might have been, there being only 1 exhibit from each of these provinces. There was no private exhibit from B.C., the only exhibit being from the Expt. Farm, Agassiz.

In the class for the best 20 varieties of apples, where there was keen competition, the first prize went to Mrs. Sangster, Falmouth, Hants Co., N.S. This was quite a triumph, as Kings or Annapolis usually takes the first prize in this class. It was generally acknowledged that the best colored fruit came from Hants Co. this year. Some of the varieties of apples which looked particularly well at Halifax were: Alexander, Ribston, King, Baldwin, Stark, Fallawater and Golden Russet. There was a good display of pears and plums, and while a fair proportion of the prizes went to Ont. in these classes, many of them remained in N.S. The Ont. men brought down a good exhibit of grapes and peaches which, with those grown in N.S., made a creditable show of these fruits.

The exhibit of apples in barrels and boxes, while not large, was good. Two special exhibits were made, 1 by the Dom. Expt. Farms and 1 by the N.S. Fruit Grs. Assn., which added much to the interest and attractiveness of the show. In the Expt. Farm exhibit there were 309 varieties of fruits shown, consisting of apples, crab apples, pears, plums and grapes grown on the expt. farms at Nappan, N.S.; Ottawa, Ont., and Agassiz, B.C. The exhibit of the N.S. F. G. A. was a good one. It was prepared by Mr. C. A. Patriquin, Wolfville, and consisted of fruit of many kinds on plates and in bottles. Here were shown also the 18 medals which have been won by this assn. in the past.

Nova Scotians may well feel proud of the fruit that is grown in their province, and while the people of each province and district naturally maintain that the best fruit is grown in their particular province or district, Nova Scotians have good grounds for maintaining that they can grow fruit which will compare very favorably with the best. Prof. John Craig, Cornell University, judged the fruit exhibit.

The flower show was held during the 1st week of the exhibition, but was not large. In cut flowers, dahlias were particularly good, and in plants, rex begonias and fuchsias.—W. T. M.

Fruit at B.C. Fair

Jas. A. Grant, Victoria

The Provincial Fair passed into history as a success in all but one department, viz., horticulture.

The failure in the fruit exhibits was not due to failure in crop, but can be attributed to the inrush of Manitoba farmers who have made their pile and are seeking a fairer clime and a pleasant occupation. These did not enter exhibits as did the previous owners of the fruit farms. All those who sold out to them have commenced afresh, with more money and experience than before, the net result being better for all.

The commercial exhibits of packed fruits, although not so large as formerly, were up to anything previously shown in point of skill in packing and quality of product. Plate exhibits, collections of fruit and district exhibits were weak in quantity and quality.

The Chilliwack exhibit was an exceptionally good one. It was made up of all the agricultural products that district could produce, and was the object of admiration and praise from Earl Grey. It merited it. See illustration.

Mr. Martin Burrell, of Grand Forks, was judge, and gave general satisfaction in his awards. This gentleman, it will be remembered, was the popular and energetic chairman of committee of resolutions at the conference of fruit growers held last March in Ottawa.

Letter From a Life Member

Ed., CANADIAN HORTICULTURIST,—I take great pleasure in the thought that I became a life member of the Ontario Fruit Growers' Association when written to by Dr. Beadle, whom I knew from 1855 until his decease. Sixty years ago I tied buds for John J. Thomas, then editor of *The Country Gentleman*. I knew Barry, Wilder, Hovey, A. J. Downing, Chas. Downing, Berckmans, Cabot, Dr. Grant, Meehan, Vick, Henderson, Parsons, Moore, Powell, Smith, Maxwell, and Dr. Warder—all great horticulturists as well as good and true men.

It may interest the readers of THE CANADIAN HORTICULTURIST to note some of the fruits and fruit prices in this city. On Oct. 11, I saw an orange quince from California that weighed nearly 2 lbs. The best Fameuse apples by the barrel that I ever saw came this year from the Ottawa valley. My grocer paid $6 a bbl. for them and sold them in one day for 3 cts. each. Comice pears are very fine this year from California. I paid 25 cts. for 2 in Oct. Anjous also are fine—15 cts. each or 2 for 25 cts.—Frances Wayland Glen, Brooklyn, N.Y.

Fruit that is loosely packed is injured in transit. Apples should be packed by experts. For best returns the pack should be guaranteed.—Frank Hamilton, Liverpool, England.

Do You Wonder We Are Happy

ISN'T it nice? Since Sept. 1, when we dropped the subscription price of THE CANADIAN HORTICULTURIST from $1 to 50 cts. a year—in other words cut it in half—we have added over 500 new subscriptions to our mailing list. All this in less than 2 months. And the best of it is, this increase has been a result of the work of our friends. We have not had paid canvassers at work except one man at the Toronto Exhibition. Our mailing list was never so large before.

The first evidence of the deluge occurred immediately after the appearance of our Sept. issue, in which we announced the drop in our subscription price to 50 cts. and offered to accept three-year subscriptions for $1.20. A further special offer to accept 4 new subscriptions for $1 during the month of Sept. was also made.

The president of our company, Mr. W. H. Bunting, of St. Catharines, was the first of our friends to secure a club of four new subscribers at the new rate. He handed them over with the remark, "I want to be the first." Right after him came a club of 10 new subscriptions from W. M. Orr, of Fruitland, Ont., and after that we began to lose track of the letters, they came so fast. Among our friends in all parts of Canada, and in the United States as well, however, who sent us clubs of subscriptions have been the following: A. McMeans, of Guelph, a club of 13; L. H. Weaver, of Dunnville, a club of 9; Mrs. Frank Rabjohn, of Toronto, a club of 8; Alex. T. Armstrong, of Barrie, a club of 6, and clubs of four from each of the following: J. G. Standish, of Belleville; W. J. Justice, of Barrie; J. C. Metcalfe, of Hammond, B.C.; W. C. Toye, of Hamilton; G. A. Putnam, of Toronto; Harry Allan, of Ottawa, and F. S. Wallbridge, of Belleville. From New York city comes a letter from our old friend Francis Wayland Glen, stating that his little grand-daughter is at work securing a club of 100 new subscribers for us there, and that she hopes to be able to send it soon. With friends such as these working for us do you wonder THE HORTICULTURIST is growing and improving so rapidly?

At the Toronto National Exhibition, THE HORTICULTURIST was given away gratuitously to any one interested, and our representative at the fruit building secured nearly 100 new subscriptions during the exhibition. We intend to be represented at the Ontario Horticultural Exhibition in Toronto this month, in the same way.

THEY SAID NICE THINGS

The best of it is many kind words and compliments are often paid THE HORTICULTURIST in letters accompanying remittances and renewals of subscriptions. His Honor Lieutenant-Governor Mortimer Clark, of Toronto, renewed his subscription recently. Among letters received lately have been the following: Mr. A. B. Carman, Iroquois Ont., wrote: "I will take THE HORTICULTURIST for the coming year, if only for old friendship's sake, as I have taken it too long to drop it now."

W. L. Patulla, of Creemore, had this to say: "Continue my subscription by all means. I am very much pleased with the way the different subjects are treated in THE HORTICULTURIST, and especially so with regard to fruit."

From Manitoba came this from Mr. L. C. Clarke: "It is just a year since I took THE HORTICULTURIST for the first time and now I should not like to be without it."

From Brantford, Mr. Chas. R. Hext wrote: "I have been a subscriber to THE HORTICULTURIST since 1880, and hope to be for many years more. Your magazine gives me much pleasure."

A NICE GIFT

If you desire to give a practical gift for the holidays, you could please none of your friends who are interested in fruit or flowers better, than by sending them a year's subscription to THE HORTICULTURIST. Send us their names and 50 cents for each year's subscription, and we will send them a nice letter telling them that they will receive THE HORTICULTURIST free for one year as a gift from you. The giving of magazines and papers for holiday gifts is fast becoming popular. It is a practice that should be indulged in even more than it is. You can send a full year's subscription for 50 cts., or three years for $1.20. Send us the names on or before the 15th of the month, to insure the names being placed on the mailing list to receive the following month's issue.

Mr. Garrett Wall

The new circulation and assistant advertising manager of THE CANADIAN HORTICULTURIST. See notice in the article on this page

OUR STAFF INCREASED

The great increase that has taken place in our subscription list and advertising patronage has made it necessary for us to increase our office staff by the addition of a circulation and assistant advertising manager. For this important position we have selected Mr. Garrett Wall, of Springfield, Mass., whose photograph is here published and who for some six years has been connected with the Phelps and Orange Judd Publishing Companies, one of the largest publishing concerns in the world. Their papers include *American Agriculturist, Orange Judd Farmer, New England Homestead, Farm and Home* and *Good Housekeeping*, and circulate in all parts of the United States and Canada. Mr. Wall has had more or less to do in connection with all these papers, and we expect that he will soon lead the way, with the continued help of our friends, to a great increase in our circulation and advertising patronage. He will assume his new duties with us the first of this month. As Mr. Wall has the happy faculty of making friends easily, we expect he will soon feel at home on this side of the line and become a good Canadian.

Our Illustrations

The illustrations on our front cover and on page 271 are views taken at the provincial fair, New Westminster, B.C. Chilliwack won highest honors for district exhibit.

The two cuts on page 269 were taken at the Niagara Dist. Hort'l Exhibition, St. Catharines. The package of peaches showing a uniform and correct pack was put up by Geo. A. Robertson; the box of pears on the left came from the fruit farm of Robert Thompson, and the box on the right was packed in the fruit house of J. H. Brodrick—all of St. Catharines. From a few specimens the paper wrappers were removed for effect and contrast in photographing. These packages are a credit to the district. They are models for less careful packers to follow.

On page 272 is a view of a portion of the Brantford Hort'l Society's flower show. The exhibition was a creditable one.

Two cuts of decorated dining tables appear on page 273. The smaller is a glimpse of the 1st prize table at the recent Niagara Dist. Hort'l Exhibition. The larger one represents a table exhibited by Wm. Jay & Son, Toronto, at the Ont. Hort'l Exhibition last year.

INSURANCE

The very best kind of Insurance—i.e., provision for the *future* as well as the *present*, is a Savings Account in

The

SOVEREIGN BANK

OF CANADA

Interest paid *four times a year.* $1.00 will open an account.

Put your money in a place where you can get it when you want it

57 BRANCHES THROUGHOUT THE DOMINION

Mention The Canadian Horticulturist when writing.

Apple Crop Below Medium and Prices Good

EARLY predictions for even an average crop of apples in Canada have not materialized. The crop is below medium. It is not uniform. Some localities report a good yield; others, light. In adjoining orchards and even in individual orchards, trees of the same variety have yielded variable quantities. Storms and insects during the past month have lessened the supply of marketable fruit. The percentage of No. 1 apples has been reduced.

Reports from British markets indicate that both American and Canadian apples for export are moving slowly. So far the shipments total approximately only 60% of the number of barrels that left Atlantic ports up to the same time in 1905, and in 1904. This means that either there is not so large a crop as buyers are talking, or growers are holding and storing larger quantities than ever they did in the past—probably both. It would seem that the apple situation is favorable for the grower.

A WORD ABOUT PRICES

The fact that various factors have diminished the crop—and this is also true of the crop in many parts of the United States—indicates that prices will be good. Through the failure of the raisin crop in Southern Europe, there will be a shortage in the world's dried fruit supply. High prices will restrict consumption. This will increase the demand for fresh fruits. It will be another factor that will tend to keep up the price of apples. In England prices are strengthening with the absorption of local fall varieties. Good prices are now being paid growers in this country for well-packed stock of the best quality. Among the sales made locally in Ontario is one orchard west of Toronto that was sold recently at $1.45 a bbl. for Nos. 1 and 2 picked. Many orchards have been sold at $1 on the trees. A number of orchards have changed hands at $2 a bbl., tree run, packed. In another locality $2.35 a bbl. for Nos. 1 and 2 packed in orchard has been refused.

THE EFFECT OF THE STORM

About the middle of October, snowstorms and frost did some damage to fruit orchards in Ont. and N.Y. state. Press reports, however, were somewhat exaggerated. In a few localities much damage was done; but in other parts of the storm belt, the orchards escaped without much injury. On the whole, the ultimate result will be a slight curtailing of the crop. This will add its quota towards maintaining prices on a firm basis. The crop correspondents of THE CANADIAN HORTICULTURIST state the condition of crops in Ontario as follows:

ST. CATHARINES DISTRICT

Homer.—The storm of Oct. 10 did great damage to peach orchards between St. Catharines and the Niagara River. One orchard in Stamford is a total wreck· trees snapped off halfway up the trunk. F tunately the storm centre was not in the peach belt, that being nearer the lake, and at Niagara-on-the-Lake. Peaches are all over except Smocks. Apples are a light crop, the second brood of codling moth doing great damage. Pears, except Keiffers, are over. Grapes have been a light crop owing to wet weather. Prices have been good.—F. G. Stewart.

Port Dalhousie.—The storm of Oct. 10 did much damage. Along the lake, no snow, but considerable wind, which did damage to apples. At Niagara Falls, Stamford, Port Colborne and St. Catharines, the snow did some damage to fruit and ornamental trees; at the latter place one man lost a nice young peach orchard, the trees breaking off at the ground. This has been a peach year. Fruit of all kinds has been abundant, plums excepted, but the high prices received for the latter more than balanced the short crop. The fire at Barnesdale Wineries caused 200,000 gals. of good wine to be lost. Some of it ran into the canal; the fish went on a spree. We expected grapes to be a drug, but not so. Blues are selling at $25 a ton. Very little frost as yet; red tomatoes are hurt, but there are lots of green ones.—G. W. McLelan.

St. Catharines.—The fall of snow on Oct. 11 caused no damage except on the ridge and in Welland Co., and there only to peach orchards in which were Smock peaches unpicked. The weight of the fruit combined with the weight of snow broke many trees in that district. The frost on night of Oct. 11 did not injure the grapes in the least. The grape crop has been good; while the quantity to the acre has not been up to the average, the quality has been excellent and prices ruled high. The bulk of the crop was sold f.o.b. here. The fruit season just closed may be summed up as a prosperous one, prices for nearly all fruits running from fair to good. The dry weather allowed it to be gathered without any waste and fruit kept well, very little being lost by rot. Insect pests of all kinds increased rapidly and have caused much damage. Many of the growers are preparing to spray this fall as soon as the leaves fall.—Robt. Thompson.

LINCOLN COUNTY

Beamsville.—The peach crop in orchards well cared for has been good. Prices ruled 20 cts. a bskt. higher than last year. The canning factories bought late varieties at 2½ to 3 cts. a lb. Apples in sprayed orchards are of excellent quality and a fair crop.—W. B. Rittenhouse.

Grimsby.—Apples are not grown extensively. Some growers have refused $2.35 a bbl. for their orchards No. 1 and No. 2. The proportion of apples that will grade is small.—J. D. Biggar.

WENTWORTH COUNTY

Fruitland.—The fruit season now closing has been satisfactory to the producers. The demand has been active and prices good. With the exception of some 10 days or so weather conditions have been favorable. Peaches are finished and pears about done, except Keiffer. Grapes have been an average crop and prices have ruled high. The bulk of the staple varieties (Concord and Niagara) bringing the grower 15c. to 16c. a 6-qt. bskt. The quality has been above average. The cold snap did no harm at Fruitland. Apples are not extensively grown but the sample is good except for codling moth late in the season. The crop was fairly good. High winds stripped the Greening trees and shook down a large percentage of other varieties.—J. E. Orr.

PEEL COUNTY

The fruit season has been a profitable one. Plums were a failure; pears and grapes, a fair crop. Apples will be about a good ½ crop, and, as a rule, are wormy. Snows are a good crop and very clean. Prices paid by packers this year for winter stock are $1 to $1.50.—W. G. Horne.

GREY COUNTY

Meaford.—The apple crop is variable; Spy, Greening, Snow and Ben Davis, where fruiting, promise good yields that will grade 35% to 50% No. 1, good size and color, and 30% to 40% No. 2. Kings and Baldwins good quality, but not an average crop. The enormous loss due to storms in early Oct. has been partly offset by later rapid growth and by the improvement in color; still, the crop of No. 1 winter fruit in western Ont. has been reduced. The loss in trees in the Georgian Bay dist. is great. In my own orchard $500 will not pay for the trees destroyed. The prices of winter apples range from $1 to $1.50 a bbl. The G.B. Fruit Grs., Ltd., are making better prices for their patrons.—A. Gifford

NORFOLK COUNTY

Simcoe.—Apples from well-sprayed orchards are all sold. The growers realized from 50 cts. to $1.25 a bbl., the unsprayed orchards realizing the cheaper price.—Jas. E. Johnson.

BRUCE COUNTY

Walkerton.—Codling moth is bad. The snow on October 9 did not do much damage. Growers are holding apples and expect good prices.—A. E. Sherrington.

ONTARIO COUNTY

Oshawa.—Quality of apples is not as good as last year, but good prices are looked for.—E. Lick.

DURHAM COUNTY

Newcastle.—West of Bowmanville apples are most all sold at $1 on the tree. The Ben Davis is the heaviest yielder. Unsprayed orchards are producing poor crops.—W. H. Gibson.

Apple Trade in Danger

Ed. CANADIAN HORTICULTURIST,—The October HORTICULTURIST published an editorial headed "Apple Trade in Danger." It appears to me that the anxiety shown therein is in a great degree needless. It may be true that several apple dealers have been thinking seriously of bringing New York state apples to Canada and storing them in bond and re-packing and shipping them to Gt. Brtn. This, however, if done at all, which is very doubtful, would be for 2 reasons, one being that the storage in York state has been pretty well cornered by the Americans and the necessary space is not available, and the other that in order to secure experienced export packers they would otherwise have to take them from here to the other side and board them in addition to paying big wages. Should the goods be stored and packed here these men would be living at home, saving needless expense, spending their money in Canada, and besides, be more comfortable themselves.

Noting your remarks re worms from York state; while they are true, the fact remains that many districts in southwestern Ont. are feeling the bad effects of a scourge, which every fruit grower knows is much worse and very prevalent, viz.: the San Jose scale. For a long time orchards were cut down to stamp it out, but it has now got beyond control. More or less of fruit affected with this from Niagara and southwestern districts is stored in Brighton every year, and other places; hence, there is nothing to be feared from apples from U.S. more than from home grown.

In my opinion, the locality has much to do with the spread of disease. In the northern and colder districts we have comparatively little of it. Fruit in the belt from Toronto to Montreal has practically not been affected with scale.

However, you will find that there will not be many York state apples stored in Canada, because freight rates are higher and, with stop-off charges added, it might be unprofitable. There may be some from the central states stored here. Surely it would be a benefit to keep our packers busy all winter, even if on U.S. produce. The fruit would be packed in bond and shipped as "product of U.S.A."

Millions of dollars' worth of U.S. produce are annually shipped from Montreal, which does not prejudicially affect the sale of our produce here; also, Canadian produce in winter is largely shipped via U.S. ports—Boston and Portland. —Eben James, Toronto.

Fruit growers should be careful to purchase their nursery stock from reliable Canadian firms. Buy stock that is grown in Canada and not surplus trees that are dumped into the country by American concerns. In the Niagara and Essex peninsulas growers are now paying dearly for cheap trees bought from unreliable concerns on the other side of the line. Thousands of these trees are so badly affected with scale that they will have to be destroyed. Growers should buy from a nursery that does business on the square. Consult the advertisement of Stone & Wellington, Toronto, on another page.

Strawberry Plant Swindle

A number of market gardeners and farmers in and about Owen Sound have been the victims of a strawberry plant swindle. A man named S. A. Gordanier, of Camden East, a village near Napanee, canvassed them and succeeded in getting about 50 orders, representing about $2,000 in value. By false representations, the farmers were duped into paying the high price of $20 a thousand for plants that ordinarily are only worth $2, and in this case, nothing—practically all the plants died. Proceedings were taken in court recently. Three test cases resulted in giving judgments to the plaintiffs. Others are expected to follow unless Gordanier agrees to settle the claims privately. The Owen Sound *Sun* makes the following comments:

"It is to be hoped that the exposure made in these cases will have a tendency to put people upon their guard in future when dealing with parties selling and calling for a written contract, especially such a contract as Gordanier put forward in this case and induced innocent and confiding people to sign. No man purchasing plants or nursery stock should be asked to give a note or make payment until he has had an opportunity to satisfy himself that the stock is up to representations, and no reputable person engaged in the business would ask for anything more, and if he does so, then the would-be buyer should promptly refuse to have any business with him."

Vegetable Growers' Program

The second annual convention of the Ont. Veg. Grs. Assn. will be held in a committee room, City Hall, Toronto, Thurs. and Fri., Nov. 8-9, in conjunction with the Ont. Hort'l Exhibition. On Wed. Nov. 7 at 2 p.m., a meeting of the board of directors of the O.V.G.A. will be held in the secty's office, Parliament Bldgs., Toronto. The following is the program of the convention:

THURSDAY, NOV. 8

10 a.m.—Chairman's address, F. F. Reeves, Humber Bay, Ont., Pres. O.V.G.A.
10.15 a.m.—"Experiments with Tomatoes," Geo. A. Robertson, St. Catharines.
10.45 a.m.—"Growing Tomatoes under Glass," C. Gibbard, Todmorden, Ont.
11.15 a.m.—"Lettuce Forcing and Bean Growing," Eugene Davis, Grand Rapids, Mich.
2.00 p.m.—"Fertilizers in Relation to Vegetable Growing," Prof. R. Harcourt, O.A.C., Guelph.
3.00 p.m.—The prize essays entered in the competition for 15 prizes, amounting to $125, offered by the O.V.G.A. for the best essays on the growing of potatoes, cauliflower, celery, tomatoes, and onions, will be read. Leading growers will start discussion of each paper after it has been read

THURSDAY EVENING

This session will be left open so that members of the assn. may have an opportunity to inspect the exhibits and to hear the famous Black Dike Band at the Ont. Hort'l Exhibition.

FRIDAY, NOV. 9

10.00 a.m.—"Forcing Early Vegetables," E. E. Adams, Leamington, Ont.
10.40 a.m.—"Onion Growing," E. G. Malcolm, Scotland, Ont.
11.20 a.m.—"Celery Growing," T. Benstead, Strathroy, Ont.
2.30 p.m.—"Melons and Melon Growing," W. G. Horne, Clarkson, Ont.
3.15 p.m.—"A Few Words on Other Vegetables," A. McMeans, O.A.C., Guelph.

The work of the C.P.R. in encouraging horticulture among its employees is to be commended. This fall 150,000 bulbs will be planted at various points along the company's lines.

Satisfied Advertisers—I.

Among the many well-satisfied advertisers in THE CANADIAN HORTICULTURIST is Mr. Eben James, the widely known fruit exporter of Toronto. For the past 9 years he has represented Messrs. Woodall & Co., Liverpool, the pioneers, and several other fruit auctioneers in Great Britain, and has been among the largest handlers of apples in Canada. He has always been in sympathy with anything that tends to promote the interests of fruit-growers, was one of the first to assist in framing the Fruit Marks Act, and has been a hearty advocate of spraying and all other methods whereby our apples can be improved. He is manager of perhaps the finest apple storage in Canada, at Trenton, and is widely known among apple men. He has always advertised in THE HORTICULTURIST, and writes us that the reason he does is because he believes "THE HORTICULTURIST is the best medium in Canada for bringing fruit culture to a higher standard."

Mr. Eben James

An evaporating plant at Napanee, owned by Collier Bros., was destroyed by fire on Oct. 20. About $4,000 worth of apples was lost.

LARGE
Juicy Red Apples
LOTS OF THEM
And an abundance of other fruits of high quality will be yours when you purchase your Nursery Stock from
The Helderleigh Nurseries
E. D. SMITH, WINONA, ONT.
Mention The Canadian Horticulturist when writing

Export Your Apples
Woodall & Company
Liverpool, England
The Pioneer Receivers from this Continent
Boyd, Barrow & Co.
Glasgow, Scotland
M. Isaacs & Sons, Ltd.
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ONLY THE BEST HOUSES REPRESENTED
Reliable information. Returns day of sale.
Crop and cable market reports free.
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CANADIAN AGENT
Phone M. 5735 103 Union Station, Toronto
Mention The Canadian Horticulturist when writing

Shipping to Great Britain

During the last few years keen competition between the different steamship lines running out of Montreal has caused them to improve their transportation facilities. The weakest link in our chain of transportation between Canada and Great Britain is not found in our ocean transportation. Apples suffer most injury from heat between the time they are picked from the tree and the time they are loaded in the steamships in Montreal. Apples should be well cooled before they are loaded into the cars.

It is not wise to ship apples in a cattle boat because the cattle deck interfcres with the proper ventilation of the holds. Apart from this, there is frequently delay at the other side because the cattle have to be taken off first at a separate dock, and in order to do this, particularly at the port of London, a large steamer is apt to miss the tides and lose from 1 to 2 days before she can be docked and her general cargo is discharged.

It is difficult to recommend any one particular steamship line for the carriage of apples. If apples are shipped by either the Allan, Dominion, C.P.R., Manchester, or Retford lines, they will receive good accommodation. These lines carry advertisements in THE CANADIAN HORTICULTURIST, in which they keep the fruit growers informed on the dates of sailing. When shipping, growers should make it a condition that the apples be stowed in well-ventilated holds.

When shipping to the Old Country it would be well for the growers to advise Mr. W. W. Moore, Chief, Extension of Markets Division, Ottawa, of the different shipments as soon as they are ready to go forward, stating the shipping point, car numbers, name of steamship line and steamer, and port of destination. He would, he told THE HORTICULTURIST, then instruct the inspector at Montreal to look out for such shipments, note where they are stowed, and as far as possible have thermographs placed in the same compartments with the apples. As soon as the thermograph records were returned from the other side he would furnish the shippers with copies of the charts. He would also instruct the inspector at the ports of Great Britain to report on the conditions of the apples when landed.

The Hon. Nelson Monteith, Minister of Agriculture for Ontario, has intimated by letter to the Ontario Horticultural Association that he favors the giving of a grant of $100 to the association to assist in defraying the expenses of bringing speakers to the conventions. He said, also, that the department of agriculture would arrange to have printed the proceedings of the annual convention next month for distribution among the members of the horticultural societies of the province. Grants for these purposes will probably be made at the next session of the legislature.

Have you sprayed and had poor results? There must be a reason. Is it because the machine you bought was misrepresented and turned out no good? Then buy one that is guaranteed to give satisfaction—one that can be depended upon. The best line of power sprayers on the market to-day is made by the E. C. Brown Company, of Rochester, N.Y. An advt. on page 292 tells what you want to know.

Growers should profit by the experience of the past season's scarcity of fruit baskets and buy their supply for next year in advance. Buy from a reliable firm. The Oakville Basket Company make all styles of packages. They recognize the importance of turning out good stock and of bringing it to the attention of growers through the columns of THE HORTICULTURIST. Recently they signed a contract for ¼ page for a year. See advt. in this issue.

Shipping Pears to England

At different times Canadian growers have attempted to ship pears to Great Britain. Good results have followed some shipments, and disappointment others. This year several shipments have gone through from Montreal to Glasgow and Liverpool. In each case, according to information furnished THE HORTICULTURIST by Mr. W. W. Moore, Chief, Markets' Division, Ottawa, the reports from the inspectors in the Old Country indicate that the pears arrived in good condition. The following are the particulars of three shipments:

S.S. Athenia sailed from Montreal for Glasgow, Aug. 30, with 641 bxs. of Bartlett pears, carried in refrigerator chamber, which were landed at Glasgow in excellent condition.

S.S. Virginian sailed from Montreal for Liverpool, Aug. 31, with 150 bxs. of Bartlett pears in refrigerator chamber. These were carried at a temperature of from 72° down to 30°, and were landed in good condition.

S.S. Canada, which sailed Sept. 1 for Liverpool, had 301 bxs. of Bartlett pears, which were carried in cool air at a temperature of from 60° down to 44°. These were reported on arrival as of good quality and in good condition.

Annapolis Valley Apples

W. T. Macoun, C.E.F., Ottawa

On Sept. 20 and 21, the writer drove from Middleton to Wolfville, N.S., a distance of about 40 miles through the Annapolis and Cornwallis valleys, which are noted for the fine apples that are raised there. This drive afforded an excellent opportunity of seeing many of the well-known orchards of that district.

The Gravenstein apples had been picked, but later varieties were, for the most part, still on the trees. The Gravensteins were badly spotted this year in most orchards, but the

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13,000 FITZGERALD	2,000 STEVEN'S RARERIPE
2,500 FOSTER	4,600 TRIUMPH
2,000 GREENSBORO	800 TOWNSEND
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writer was particularly struck with the freedom from spot on the later varieties all the way from Middleton to Wolfville. Not only was the fruit clean, but there were very few codling moths observed, and the conclusion reached was that, while the crop would not be more than a medium one, the fruit would grade high. The variety which was especially admired was the Blenheim, which we believe will soon take the leading place in the estimation of the fruit growers there.

Judging by the orchards seen, we should say that this year there is a good crop of Blenheim, Wagener and Baldwin; a medium crop of King and Ben Davis; a light to medium crop of Ribston, Roxbury, Russet (Nonpariel) and Golden Russet. The Northern Spy is not a prominent variety in N.S. The apples generally appear higher in color this year than we have seen them, owing doubtless to the dry season.

POULTRY DEPT.

Conducted by
S. Short, Ottawa

Now that severe frosts are beginning, the housing of the fowl through the winter is the important question in the minds of breeders. Some are extending their poultry houses, and others are building new ones. One of the chief parts of a poultry house is the floor. With a view to economy some houses are built without any floor other than the earth. By experienced people this plan is seldom used, especially in the colder parts of the province. While dry sand or earth is desirable for the outside scratching pen, used to give the fowl exercise on sunny days, t has not been found satisfactory for the permanent house floor. The fowl scratch deep holes into the dirt and thereby mix it with the litter, dry leaves or chaff. This makes it impossible to clean out the pen without removing quantities of the earth. This is tedious work, and sometimes it lowers the level of the floor down to the foundation of the building. It thus allows the cold air to enter. It is not always convenient in midwinter to obtain a fresh supply of dry earth to renew that removed in cleaning up.

CEMENT VS. WOOD FLOORS

Two flooring materials may be used, cement or wood. Cement is a cold floor. It is, also, more expensive than wood. When the outside temperature rises in winter, as it does frequently, the cement retains, for some hours, a lower temperature than that outside, and this causes moisture to form on the surface of the floor. This dampens the litter, which must always be used liberally to keep the fowl from coming in contact with the cold cement. It has one distinct advantage, however, over other floorings: It will keep out the rats, but they get even by gnawing away the lower corners of the doors.

The best flooring is wood. It is dry, warm for the fowl to stand on and absorbs the moisture from the drippings. The same quantity of litter on a wood floor will last half as long again as on a cement floor. No mistake will be made in putting into the building a wooden floor.

SCALY LEG

In most pens some birds will be noticed to have scaly legs. It is much easier to treat these birds now than when the weather is colder. The remedies are simple. Kerosene or vaseline applied once a week, giving 2 to 3 applications, is all that is necessary.

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Vegetable Conditions Indicate Good Prices for Winter

VEGETABLE crops are about all harvested and stored. In most sections the weather for this purpose has been ideal. Frosts, early in October, cut off the tender vegetables before their usual time. A general summary of the situation during the last season, as reported by crop correspondents of the Ont. Veg. Gro. Assn., shows that crops have been fairly good and prices above the average. Onions, particularly those grown on light soil, yielded poorly. Dry weather during the latter part of the season prevented other crops from attaining good size.

The potato crop is only medium; in some localities there are not enough on hand to supply the local demand; they have not been stored in large quantities, and this winter it is probable that they will bring a good price. Root crops have been fair to good except turnips, which are slightly under average. Onions, being scarce, will be in good demand, and prices will advance. There has been a poor crop of winter cabbage; they will be scarce and good prices will rule. Cauliflowers are a failure both in crop and quality Brussels sprouts, also, are scarce. The celery crop is variable; in the Leamington district, it is excellent; in Niagara Falls district, poor; on the whole, the crop is fair, but winter stock will not be overabundant; prices should be firm. Squash and citrons have yielded heavily and are plentiful. Salsify is a good crop; spinach, fair crop of good quality.

The prospects for winter vegetables grown under glass are good. Many new forcing houses have been built this fall and the old houses will be run to their full capacity, particularly in the growing of lettuce. Were it not for a probable scarcity of stored vegetables this winter, this increase in the forcing business would indicate the possibility of an oversupply. It is likely, however, that the demand will be sufficient to handle all that will be grown.

MONTREAL DISTRICT

Lachine.—Owing to early frosts all crops are gathered. The dry weather retarded growth and made the specimens small. The following were the prices on Oct. 20: Cabbage, 35-50c. a doz.; cauliflower, $1-$1.50; celery, 35-60c.; lettuce, 75c.-$1; squash, $1; marrows, 50-75c; carrots, a bag, 75-90c.; beets, 75c.; onions, $1.35; parsnips, $1; turnips, 60c; potatoes, 90c.-$1.25; peppers, $1.25 a bu.; Brussels sprouts, 75c. a doz. stalks; spinach, 50c. a crate; leeks, $1 a doz. bnchs.—Chas. A. Smith.

OTTAWA DISTRICT

Billings' Bridge.—Potatoes are a good crop; turnips, good; carrots, beets and parsnips, short; cauliflower is good and a glut; good cabbage, scarce; celery, good, no heavy losses either by blight or rust. Salsify, a good crop. Herbs, squash, and citrons are good. Onions are a glut, good red selling at 80c.-$1 a bag. Prospects for winter trade in greenhouse goods indicate an oversupply. Several large lettuce houses have gone up this fall, and the old houses will be run to full capacity. Lettuce, however, is scarce at present.—T. Mockett.

FRONTENAC COUNTY

Kingston.—On the whole, the past season has been good and prices remunerative. Late varieties are not up to standard. Cabbages are lacking in firmness; cauliflower, not maturing properly. Turnips, not large, also parsnips. Potatoes have yielded better than was expected, the yield being above the average of the past five or six years. Onions averaged about ½ a crop. Weather for storing has been ideal.—Chas. F. Adair, Cataraqui.

LENNOX AND ADDINGTON

Napanee.—Crops are all harvested. Potatoes have been a fair crop, few rotten ones, and prices are ranging high, 90c. to $1 a bag. Onions are scarce and inferior in quality; price 80c. to $1 a bag. Cabbages are scarce and selling on Oct. 20 from $1.50 to $2.50 a doz. according to size. Other vegetables are plentiful, and are bringing good prices.—E. M. Sherman.

TORONTO DISTRICT

Humber Bay.—Frost on Oct. 10-11 killed the tender vegetables; it also cleaned the late cabbage and cauliflowers of slugs and worms. Cauliflowers are not heading properly. Late cabbage are not plentiful, and will bring a fair price this winter. Carrots and parsnips, good crop. Late beets, fair. Brussels sprouts are scarce and in good demand. Spinach, not plentiful, but of good quality. Late celery is still growing. Citrons, good crop and large size; not much demand. Squash, heavy crop but low prices. Onions were harvested in excellent condition, but not large in quantity. Outside lettuce, nearly done; greenhouse, now ready.—J W. Rush.

PEEL COUNTY

Clarkson.—Crops, on the whole, have been good, except onions that were planted on light soil felt the effect of the dry weather. Onions on heavier land turned out well. Potatoes, early and late, have been good, especially the former. Cucumbers for pickling were not extensively planted, even those that were grown

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were shortened by the drought; good prices were realized.—W. G. Horne.

HALTON COUNTY

Burlington.—A hard frost on Oct. 8 ended the tomato season, whereas last year they were picked till the end of the month. Late cauliflowers are getting scarce; crop has been good with prices better than last year. Late cabbage, a fair crop and good prices. Onions are being sold at an average of 1¼c. a lb. It is probable that prices will advance. Potatoes only a medium crop, with price on Oct. 20 1c. a lb Parsnips and carrots not grown extensively, but where raised are a good crop, and bringing high prices; the majority will be marketed later on. Celery has not been a good crop; the price should be firm.—J. A. Lindley.

ST. CATHARINES DISTRICT

Potatoes, about ½ a crop, are clean and free from rot. Turnips, almost a total failure. Carrots, smooth and a fair crop. Onions, well saved, crop light. Tomatoes, all ripened before frost, were not over ½ a crop. Citrons and squash, very good.—Robt. Thompson.

WELLAND COUNTY

Niagara Falls South.—Heavy showers during past month improved the growing crops. They produced also a heavy crop of field mushrooms, which were a feature of recent markets. Late cabbage, medium crop; cauliflower, owing to aphids, a failure; celery, small and short crop. Fall lettuce, poor. Onions, all harvested and ½ a crop. Melons, all gone except citrons, were a big crop. Winter squash, a heavy crop with hard ripe shells. Winter radish clean and free from maggots. Spinach and salsify, good. Beets, carrots and parsnips, medium. Swede turnips, a failure. Potatoes are all dug and only 2-5 of a crop. Tomatoes are finished. Frost and snow on Oct. 11 cut off the tender vegetables. Spring onions look fine. Greenhouses have been started with forcing stuff. On the whole, the past season will amount to only ½ an average crop; still, a good demand and good prices made it a profitable one.—Thos. R. Stokes.

LAMBTON COUNTY

Sarnia.—Late potatoes, as mentioned in last report, are a light crop, but prices are high, thanks to the local branch of the O.V.G.A., which raised the price to 50c. a bu. There will not be enough potatoes to supply the local demand. Late cabbage, not as large as usual, are a fair crop; there will be a demand for them before winter is half over. Carrots, beets, and parsnips are an average crop. Celery, a fair crop; price is steady at 30c. a doz. Onions, a light crop, were selling on Oct. 20 at 60-90c. a bu. Hubbard squash is plentiful. Cauliflower is scarce and small. Turnips are not grown extensively; the crop is poor. For the season, vegetable crops have been below the average.—W. A. Broughton.

KENT COUNTY

Chatham.—Heavy frosts caused considerable damage to the celery crop. Potatoes are all harvested; generally they are a poor crop; they are selling at 85c. to $1 a bag. Onions are rather scarce and are selling at $1 a bag. Root crops have given a medium yield. Winter cabbage will be scarce.—Fred. Collins.

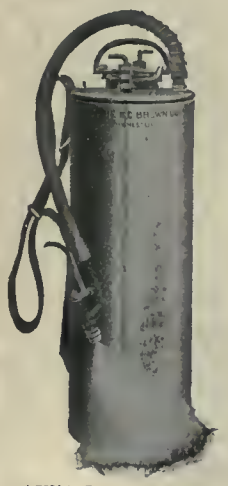
ESSEX COUNTY

Leamington.—Some growers are well satisfied with the past season's results, not only with the crop, but on account of good financial returns; others, who attempted the growing of vegetables commercially, are tired of it, and say that they will devote their energies in another direction next season. Heavy frosts on Oct. 10 killed the tomato and other vines. Onions have been marketed in large quantities; only small lots are being held for the winter supply; they have been sold at 50c. a bu. in car lots. Potatoes have not been a large crop; some fields did not pay for the digging; as usual, several cars will have to be brought into the district during the winter and next spring. Owing to tobacco being grown in large quantities, potatoes are not grown as much as formerly, although one season with another they pay fairly well. Root crops, owing to drought, are undersized, and the crop is only medium. Late cabbage is good. Celery is excellent, some claim the best in years. Under glass, lettuce and tomatoes are growing well. The quantity of lettuce may be a little more than last year. One grower is growing tomatoes under glass for winter.—E. E. Adams.

The Toronto Hort. Soc. held a profitable meeting early in Oct. Many questions on various phases of gardening and amateur fruit growing were asked. They were answered by Mr. Thos. Manton, of Eglinton; Mr. E. F. Collins, Allan Gardens, Toronto; and others. A full report of the topics discussed will appear in another issue of THE HORTICULTURIST.

A special prize, to be called the "King Edward Special," will be offered for competition at the Ontario Horticultural Exhibition. The King Edward Hotel, Toronto, is donating a silver sett of three pieces—tray, pitcher and goblet—valued at $25, for the best collection of preserved fruits in glass jars, the collection to consist of strawberries, raspberries, cherries and peaches. The King Edward is prepared to buy from winner a yearly supply for the hotel.

The Ont. Entomological Soc. met in convention at Guelph on Oct. 10 and 11. Among the questions discussed that interest the practical fruit grower were the San Jose scale and the codling moth. Pressure of space prevents a report of the discussion in this issue. It will appear later.



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Items of Interest

Among the hort'l societies that do much towards the dissemination of knowledge in amateur gardening is the one at Guelph. Bulletins are issued at frequent intervals. The one for October is on "Bulb Culture," prepared by Wm. Hunt, of the O.A.C.

In our next issue we expect to have an illustrated article on growing mushrooms by a lady who has made the business a success, Mrs. E. C. Bennett, of Thornbury, Ont. She has grown single mushrooms that weighed 16 ozs. Mrs. Bennett also grows spawn for the beds. Read her advertisement in another column. It is on page 290.

Early in Oct., the Toronto branch of the O.V.G.A. held its monthly meeting. Many items of business were discussed, and plans were laid for the future. The Nov. meeting will be held on the 3rd inst., when the following subjects will be discussed: "Forcing Radish and Lettuce," "Mushroom Growing," and "The Growing of Early Vegetables." In the course of the Oct. meeting, Mr. Wm. Gilman, of Humber Bay, stated that he had used, for potato beetles, mashed potatoes mixed with Paris green scattered along the rows in the spring. Mr. J. W. Rush stated, in his own peculiar way, that he thought as good a remedy would be cayenne pepper sprinkled at the base of each plant so that the "bugs" would be made to sneeze and break their necks.

Last winter, realizing that in order to be in any way successful in the growing of flowers in my own home, I saw the necessity of using some means other than ordinary. I got some of Arnott's Plant Food. This I used according to directions, and I had splendid results. By its use I was enabled to keep my plants, not only growing, but in fine condition for their summer's work.—E. Culverhouse, Toronto.

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Changes in Constitution

The annual meeting of the Ont. F.G.A. will be held in the City Hall, Toronto, on Nov. 7 and 8. During the afternoon session on Wed, Nov. 7, a special committee appointed to consider the revision of the Constitution and By-laws (see page 108-110, Report of 1905), will submit a report recommending many important changes, among which are:

Clauses 7, 8, 24, 25, 26, 27 and 28 shall be cancelled and the following substituted: (7) The election of directors shall take place in Dec. of each year at board meetings of the affiliated assns., as defined in Clause 28 governing affil'd assns. (8) The newly elected directors shall at the first meeting of the board appoint from among their number a pres. and a vice-pres., and from among themselves or otherwise a sec.-treas. (24) Fruit growers in any section of Ont. may form a local assn., which, later, may become affiliated with the Ont. assn. on the condition defined in Clause 26. (25) It shall be the duty of the officers and directors of the Ont. assn. to encourage the formation of such local assns.

(26) Any local assn. may affiliate with the Ont. assn. when it has a membership of 10 upon the payment to the treas. of the Ont. assn. of $5 for the first 25 members or fraction thereof above 9, and 25 cts. a member for every additional member, which payment shall entitle the members to all the privileges and advantages of membership in the Ont. assn., including representation on the board of directors, upon the terms defined in Clause 28. (27) Fruit growers, who are members of 2 or more local assns., shall be accepted as members of the Ont. assn from that branch assn. only which is the first to forward their membership fee to the sec.-treas. of the Ont. assn.

(28) The directors of each affiliated assn. shall, during Dec. of each year, appoint a director of the Ont. assn. as follows: (a) Any assn. having 10 members or over shall appoint one director, whose expenses when attending meetings of the board shall be paid by the Ont. assn. (b) At all board meetings of the Ont. assn. each director present representing any branch shall have the right to cast 1 vote for every 25 members or fraction thereof of his branch who are members also of the Ont. assn.

Program Hort'l Association

The Ont. Hort'l Assn. will hold its annual meeting on Friday, Nov. 9, in City Hall, Toronto. The following program has been prepared:

Friday, November 9

10.00 a.m.—President's Annual Address, Mr. W. B. Burgoyne, St. Catharines; discussion led by 1st Vice-Pres., Major H. J. Snelgrove, Cobourg, Ont.

10.30 a.m.—Presentation of committee reports, including the report of the committee appointed to draft a constitution for the Association.

11.10 a.m.—"The New Act Governing Horticultural Societies," Mr. H. B. Cowan, Toronto, Prov. Supt. An opportunity will be given the representatives of hort'l societies to discuss the various clauses of the act.

AFTERNOON SESSION

2.00 p.m.—"City Garden Competitions," S. Short, Pres. Ottawa Hort'l Society; discussion led by R. T. Steele, Hamilton, Ont.

2.45 p.m.—"How to Interest School Children in Horticulture," J. Thos. Murphy, Sec. Simcoe Hort'l Society; discussion led by Mr. J. Walter Brooks, Brantford.

3.30 p.m.—Election of officers. Suggestions in regard to work the Association might undertake during the coming year.

Questions for our "Question and Answer Dept." must be signed by full name of sender. Otherwise answer may be delayed. We write enquirers personally, but publish only initials.

GOOD HOMES IN VIRGINIA

Virginia offers fine opportunities to the farmer and investor. Climate is mild and healthful, soil is fertile, and grows all crops and fruits; near the great markets. Land is selling below its value, but increasing in price every year. Many Canadians are living in Virginia. The State Department of Agriculture gives any information. Address G. W. KOINER, Commissioner of Agriculture, RICHMOND, VA.

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A continued accumulation of organs of best makers, taken in exchange when selling our well-known piano, makes it necessary that we clear the stock quickly to give needed room for our regular piano business. Here is the explanation of the sensational prices that follow:—

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DANIEL BELL—High back with mirror, mouse-proof pedals, 5 octaves, 10 stops, 4 sets of reeds, couplers, grand organ and knee swells. This is a very nice walnut case Organ and exceptionally good value at..... $45.00

BELL ORGAN—High back with mirror and music rack, 10 stops, walnut case, panelled, 4 sets of reeds, couplers, vox humana stop, grand organ and knee swells. This is a good Organ and a handsome ornament for a parlor..... $46.00

THOMAS ORGAN—High back with mirror and music rack, very handsome walnut case, mouse-proof pedals, lamp stands, etc., 5 octaves, 10 stops, 4 sets of reeds, treble and base couplers, grand organ and knee swells. This is an excellent Organ and would be very satisfactory to a musician..... $47.00

DOMINION ORGAN—High back with mirror and music rack. This is an exceptionally handsome case with cylinder fall, 7 stops, treble and base couplers, vox humana stop, lamp stands, mouse-proof pedals, etc. Better see this one, at..... $50.00

BROWN—Walnut case, high back Organ with music rack, 6 octaves, 9 stops, 4 sets of reeds, treble and base couplers, grand organ and knee swells, lamp stands, etc. Special at..... $61.00

KARN ORGAN—6 octaves, piano case, 11 stops, 4 sets of reeds, including vox humana stop, treble and base couplers, grand organ and knee swells, mouse-proof pedals, lamp stands, etc. A very nice Organ and A-1 value at..... $63.00

DOHERTY ORGAN—6 octaves, mahogany case with long music rack, 11 stops, 4 sets of reeds, vox humana stop, treble and base conplers, grand organ and knee swell, lamp stands, mouse-proof pedals, etc. This is a very handsome instrument and with the long music rack should give every facility for a good musician. Special at..... $72.00

BERLIN ORGAN—Beautiful walnut case, 6 octaves, 11 stops, including vox humana stop, treble and base couplers, lamp stands. mouse-proof pedals, etc This is a very nice Organ and one that would be satisfactory to any musician. A-1 value at $73.00

EASY TERMS OF PAYMENT—These organs are sold under the following conditions:—Organs under $50.00, $5.00 cash and $3.00 per month; organs over $50.00, $8.00 cash and $4.00 per month. Discount, 10 per cent. off for cash. If quarterly or other terms would be more convenient, write us what you can do and name your choice, and we will hold it until terms are arranged. Freight paid to any point in Ontario, and satisfactory arrangements made to other provinces.

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Mention the Canadian Horticulturist when writing.

The Canadian Horticulturist

Vol. XXIX DECEMBER, 1906 No. 12

The Relation of Winter Apples to Hardiness of Tree*

W. T. Macoun, Horticulturist, Central Experimental Farm, Ottawa

THE search for a hardy, productive winter apple of good color and the best dessert quality is becoming an old story in the north-western states, in the north-central and eastern portions of the province of Ontario, throughout the province of Quebec, and over a large part of the province of New Brunswick. Over this immense territory the cry for many years has been for a long-keeping apple which will compare favorably, in all particulars, with the best long-keeping apples grown in the more favored parts of the American continent. Why does this search still go on? And will the desired apple ever be found? These two questions I shall attempt to answer in this short paper.

From the writer's experience with over 3,000 species and varieties of trees and shrubs, exclusive of cultivated fruits, from many countries and climates, that are under his care and observation at the Central Experimental Farm, Ottawa, I have drawn the following conclusions regarding hardiness of trees: A tree or shrub which will withstand a test winter at Ottawa must be one which ripens its wood early.

Trees or shrubs which are native to places having a longer or much longer growing season than at Ottawa, grow longer than the native species, or those from a somewhat similar climate to the native species. When a test winter comes, their wood is not sufficiently ripened, or winter-resistant, and they are more or less injured or perish.

After 17 years' observation of this large collection, which has increased to over 3,000 species and varieties, it may be said that with scarcely an exception, and these doubtful ones, no apparent increase in hardiness has taken place in individual specimens. Plants which killed to the ground 17 years ago, kill to the ground still. Those which killed to the snow line, kill to the snow line still. Those which are killed back one-half or merely a few inches at the tip do so still. Sometimes a tree will remain hardy for several years and then kill back to near the ground. It is possible that they are getting hardier very gradually, but if so this increasing hardiness is imperceptible so far. Another observation regarding tender trees has been that after a season when the growth has been strong more injury is likely to occur than in a season when the growth is short.

Individual specimens of certain species have been found hardier than others. This has been particularly noticeable in the case of *Catalpa bignonioides* which, as a rule, kills back badly at Ottawa, but some individual trees have proven much hardier and bloom freely at Ottawa. The raising of seedlings from these tender species has not been carried on long enough to state positively, from our own experience, that hardier types will be produced in this way, but the history of such work makes us hopeful. Some favorable results have, however, already been obtained.

*Read before the last convention of the Quebec Pomological Society.

All Meat—No Waste

You are making THE CANADIAN HORTICULTURIST very valuable. It is all *meat*, free from bone and waste. I have pleasure and profit in reading it.—Frances Wayland Glen, Brooklyn, N.Y.

Let us now turn to the hardiness of apple trees, and we might include all other large fruits that have been tested at Ottawa. About 700 named varieties of apples have been tested. It has been found that a far larger proportion of those which originated in the eastern and south-western states are tenderer than those which originated in the north-eastern and north-western states and in Canada. The same may be said of Europe. The hardy varieties from Great Britain, France, and Germany are few compared with those from the colder parts of Russia. The exact figures have not yet been worked out, but may be before this paper is published. It may be stated safely that the hardiest apples are those which have originated in Russia. They are the hardiest survivors of the hundreds and thousands of varieties which have originated in Russia during the past centuries, and have shown their ability to withstand the winters there as far north as latitude 55°, or further in a continental climate. In America, and especially in the colder parts of the country, the origination of varieties has been more recent, and we believe that it will be some time before such hardy kinds as Hibernal, Charlamoff, and Duchess will be obtained on this continent, although some quite hardy varieties have already been originated.

By again analyzing the list of varieties tested, we find that the season of all the hardiest varieties is summer or autumn. The winter of 1903–4 was a very severe one in Ontario, and in the orchards at the Central Experimental Farm, and 164 varieties of apples were winter killed. An analysis of these varieties, a list of which was published in the annual report for 1904, shows that 130 of these were early winter and winter varieties, and 34 summer and autumn. This is sufficient evidence to prove that summer and autumn varieties are hardier than later keeping sorts.

Let us now consider the difference between a summer and a winter apple.

A summer apple is one that is ready for use in the summer; a winter apple is one that is not ready for use until winter. The season of the first is much shorter than the second, mainly because it reaches maturity in a hotter time of the year than the others. Duchess and Wealthy apples will keep much longer on Prince Edward Island, where the climate is cooler and development slower than they will at Ottawa. Winter apples will also keep better there than they will in those parts of Ontario where they succeed.

It has been observed frequently that apples which mature early and are in condition for eating in summer and autumn are grown on trees that ripen their wood early, and on the other hand, an apple which is not ready for use until winter is usually grown on a tree that does not ripen its wood early. This is a fact which many have observed and that is perfectly natural. The fruit of most varieties of winter apples has to be kept on the trees at Ottawa until there is

danger of severe frost, in order to get the apples sufficiently mature that the flavor will develop and that there will be a fair color. The wood of such trees, also, is equally slow in arriving at that stage of ripeness which will enable it to withstand the winter, as has been proven by the figures given above.

Some winter apples are hardier than others, but from our experience with a large number of varieties we are forced to conclude that unless the fruit of a variety reaches a certain stage of development or maturity every season a certain time before it has to be picked, owing to danger from severe frosts, that variety is not a safe one to plant. What that stage of maturity is we cannot at present definitely say.

In a nutshell, then, it is a physiological impossibility for the majority of winter apples which have yet been produced to prove hardy in the northern parts of the United States and the colder apple districts of Canada, because the trees having originated where the season is longer grow too late for our short season. Must we then conclude that the origination of a hardy winter apple for the north of good color, and the best dessert quality, is an impossibility? I believe not. Apples that will keep nearly all winter when grown in some districts are autumn apples elsewhere. Some of the hardy varieties of Russian apples which have been introduced, are found to be much earlier in season in America than they are in Russia. The growing and ripening season in two countries, or districts, while about the same length of time, may vary sufficiently to cause a marked difference in the season of a variety. As an example, I should like to refer again to Prince Edward Island, where there is a late spring, but where severe frost does not come until late, and to the colder parts of Ontario where the spring is early but where fall frosts are early also. In order, then, to get an apple most suited to a district or climate, and to get it of the season required, it must be originated in that climate.

The work of originating apples has been comparatively recent in the northwestern states, and in the colder parts of eastern Canada, and by far the largest majority of seedling apples of merit which have been produced are summer or autumn kinds. This is due to two principal causes. In the first place, because most of the seedlings have been raised from summer or autumn varieties, and we should naturally expect that most of such seedlings would be of the same season as their parents. In the second place seedlings have been raised from the best late-keeping varieties, but which are not hardy enough to stand a test winter, and the seedlings from such trees have not, as a rule, proven hardy.

I do not believe that because seedlings are raised in a climate with a short season that the largest proportion of them will prove early apples regardless of their ancestry. In most cases in the past the ancestry of seedling varieties originated in the north has not been favorable to the production of hardy winter varieties. The importance of ancestry in the origination of a hardy winter apple is well illustrated in a number of cross-bred apples which have fruited at the Central Experimental Farm. Of a cross between Scott Winter, male, and McMahon, female, made by Prof. John Craig when horticulturist, 23 trees have fruited. None of these are earlier in season than McMahon, and 14 of them are later keeping apples. Practically all of them have some visible resemblance to the parents, and some are very similar to both parents. All withstood the test winter of 1903–4.

The basis for the production of the desired winter apple for the north should be a variety or varieties which have withstood test winters in the north, and are also the latest keepers of such varieties. It has been said already that late-keeping varieties mean late ripening of wood, hence tender trees; but such late-keeping, hardy varieties as have already been originated in the north, are of a different class. They are varieties which, although they mature or are fit for use early in the winter, yet keep all winter with good care. The fact that they are fit for use early means that the wood has ripened comparatively early, and hence is able to withstand the cold. Pomologists are well aware that certain varieties of fruits which are ready for use at the same time as other varieties will keep much longer. It is to this class that the desired winter apple for the north will belong.

The following winter varieties originated in the north stood the test winter of 1903–4 at Ottawa, and are just such apples as have been described: Canada Baldwin, originated in the province of Quebec; Winter Rose, originated in Dundas country, Ont.; Calumet, originated in Calumet Island in the Ottawa River; Baxter, originated near Brockville, Ont.; La Victoire, originated in the province of Quebec; Stone, originated in Vermont; Scott Winter, originated in Vermont; Milwaukee, originated in Wisconsin.

Other promising unnamed late-keeping seedlings, obtained from the colder parts of Canada and the United States, are growing at Ottawa. We have also crosses and seedlings of our own production which have not fruited, from which something good is expected. None of the varieties above mentioned have all the desired points, but we consider the outlook very bright for the origination of a hardy, productive, long-keeping variety of good color and best dessert quality for the north.

Apple Tree Top Grafted with Two Varieties on Hardy Stock

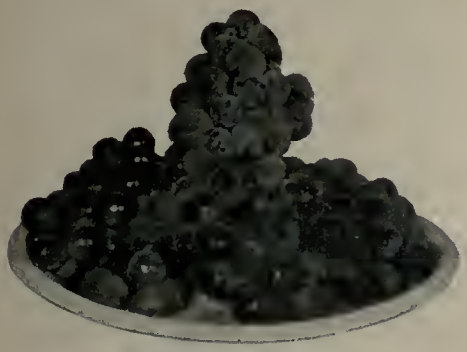
One variety winter-killed, other uninjured and requiring props to support load of fruit. It shows how a hardy stock does not increase hardiness of a variety to stand a test winter. Hardy variety is Milwaukee; tender variety, Martha apple (not Martha crab).

Eat more fruit and less meat.

Home-Grown Fruits for Christmas

H. S. Peart, Ontario Agricultural College, Guelph

THE judicious selection of home-grown fruits suitable for the Christmas season is one which has received but little notice from purveyors. With the advent of Yuletide the busy housekeeper keeps a close



A Plate of Vergennes

watch for fruits suitable for the Christmas dinner, and for the production of artistic decorative effects. Tropical fruits are used extensively. Oranges, bananas and Malaga grapes seem to be the favorites. Let us pause for a moment and consider why home-grown fruits are not used more extensively. In the first place, the relatively low price of imported fruits as compared to home-grown ones at the Christmas season has had much to do with the ever-increasing use of perishable southern fruits. Secondly, native fruits are not offered by local salesmen because they have not yet learned how to handle our most delicate and high quality fruits.

What is more refreshing on Christmas day than a well-matured, thoroughly ripened Anjou pear? Compare its buttery, melting properties with the insipid flesh of a green picked Jamaica banana, or the acid flesh of all but the very highest grade oranges, the kind reserved for those to whom money has little or no value. Everyone should have at least a basket of Anjous for Christmas day. Select well-matured specimens toward the end of October, and store them in a dark place in a cool cellar. If they do not ripen fast enough to be ready for Christmas, bring a few of them into a warmer room for a few days, and you will be surprised how quickly they will mellow and become ready for eating.

Grapes Packed for Storing

During the past few years the imports of Malaga grapes into Canada have continued to increase. This is well, from a fruit-consuming standpoint, but it is not in the best interests of either Canadian producer or consumer. For those who have always used Malaga grapes, allow a suggestion. Order direct from a reliable grape grower a half dozen baskets of carefully selected home-grown grapes, specially packed so that no berries are broken from the stems, and packed with a sheet of paper between each layer of fruit, or what is better, each bunch carefully wrapped in Manilla paper. Boxes of choice fruit, as shown in the illustration, form a convenient method of storing. Set the baskets or boxes in a dark, cool cellar, and the fruit should compare favorably in quality with the choicest Malagas, and the cost will be less than one-half. Such varieties as Vergennes, Salem, and Lindley are the most satisfactory.

What place has our common apple for Christmas cheer? A few choice Fameuse, McIntosh, Swazie, and Northern Spys in an attractive setting of mixed fruit gives us a glow of color and richness that is impossible to obtain from imported fruit, most of which is yellow and entirely unattractive in appearance. For purely decorative effect, the little Lady apple may be used on our Christmas trees and over our mantles. Its rosy cheek and bright yellow skin blends remarkably well with an evergreen background.

Among the native fruits that tend to further the success of the Christmas display, we must not omit the cranberry. What turkey is complete without cranberry sauce? Thousands of acres of these piquant berries are found growing wild in Canada.

A good collection of nuts should always be provided as a supplement to our Christmas cheer. Of these, Canada furnishes a great variety. The English walnut, so famous on account of its rich, sweet meat, has been introduced into British Columbia, and it may be only a matter of a few years until we may be producing it in sufficient quantity that the people of the home land will be sending to us for supplies. Filberts, hazels, black walnuts, shag-bark hickories, and butternuts are found in many parts of our great Dominion. Although scarcely so easily prepared as almonds and brazils, native nuts deserve a place on the Canadian Christmas menu.

A choice collection of home-grown fruit served for Christmas cheer adds greatly to the general decorative effect of the dinner table. It will be relished by young and old, and each should feel they are enjoying the fruits of our young and promising Canada.

Apples and Grapes Grown at Central Experimental Farm, Ottawa

The Codling Moth and How to Combat It

Dr. C. J. S. Bethune, Ontario Agricultural College, Guelph

At the last annual meeting of the Entomological Society of Ontario, held in Guelph, with Dr. Fletcher as chairman, an interesting discussion took place upon the Codling-worm, in which a number of practical entomologists took part. One of the important points brought out in connection with the life history of the insect is the fact that east and north of Toronto there is practically only one brood per annum, while west of Toronto, throughout the Niagara peninsula and the southern counties of western Ontario, the insect is double brooded. A different treatment is therefore necessary in the two sections of the province. Where there is but a single brood a sufficient remedy will be found in the spring spraying with Paris green, which should be done a few days after the blossoms fall, and before the calyx closes, and again about two weeks later. As all varieties of apples do not come into bloom or shed their blossoms on the same day, the fruit grower should be careful to note those trees that are later than others and treat them at the proper time. Subsequently all fallen fruit should be destroyed. If these measures are properly carried out at least 75 per cent. of the crop, and possibly a larger proportion, will escape injury from the insect.

About Toronto and westward the fruit grower should watch his trees and find out whether there are two broods or not. At Guelph it is found that about fifteen per cent. of the first brood complete their transformations in the summer and produce a second brood. Further north this proportion would be smaller, but to the south it would be greater and a more serious matter, involving a different treatment. If the spring spraying is properly carried out, and the fallen fruit destroyed, the second brood will not amount to very much, but if these measures are neglected or carelessly performed, the second brood will be most destructive. These second brood caterpillars enter the fruit anywhere that they can find a convenient place, for instance where two apples touch each other, or where there is any rough spot on the skin; the tiny worm seems to require some support to enable it to bite its way through the skin and penetrate the fruit. It will be necessary to maintain a close watch and to spray the trees as soon as any entrance holes are to be found. No date can be specified as the time varies with the season and the locality.

It will not do to rely upon spraying alone. The trees should also be bandaged, beginning as soon as wormy fruit falls from the trees. Bandages can be made of burlap or sacking, or any thick material, and tied with twine around the middle, leaving the portion above and below the string somewhat loose. The object of the bandage is to provide an attractive shelter for the worms to come to when they want to form their cocoons. It is absolutely necessary to take off the bandages and kill the worms beneath them at least every 10 days, otherwise the bandages become an actual aid to the insect. Before beginning, all loose bark should be scraped off the trunk where the bandage is to be applied in order to leave no hiding place for the worms except the burlap. When the bandage is taken off all worms and cocoons should be destroyed and the bandage replaced. Most of them will be found in the burlap and can easily be crushed, others burrow into the bark and are not readily seen, but they also can be quickly destroyed with a wire brush. This is no doubt a troublesome and expensive remedy, but it will be found to pay. The second brood is by far the most injurious to the fruit, causing large quantities to fall prematurely, and rendering some of the finest apples unsaleable. The benefit may not be entirely reaped during the first season, but it surely will during subsequent years, if faithfully persevered in.

To destroy the fallen fruit, Mr. Geo. E. Fisher, of Burlington, recommended turning pigs into the orchard, and described their effective work. This may not in all cases be practicable, but it is absolutely necessary that the apples should not be left lying on the ground till the worm has had time to come out and crawl away to some convenient shelter.

The subject of parasites was introduced by Dr. Brodie, of Toronto, who read a valuable paper on the subject, and the discussion was shared in by many of those present. There is evidently no parasite in Ontario that can be relied upon to keep the insect in check, but efforts should be made to ascertain what parasites we have and to what extent they can be bred and multiplied. Dr. Brodie has been studying and experimenting upon them for years, and finds that the parasites we have are themselves kept in check by secondary parasites, and are not sufficiently abundant to effect any appreciable reduction in the numbers of the codling-worm.

Since the meeting the writer has learned from Mr. E. M. Ehrhorn, Deputy Commissioner of Horticulture for the State of California, that they have there a parasite imported from Europe, which they hope will materially aid in checking the colding-moth. They have it established in orchards, but it is too soon yet to tell definitely how far it is likely to prove efficacious. Should the experiment prove a success, every effort should be made to introduce the parasite into this country.

Mulching Strawberries

J. C. Black, Truro, Nova Scotia

As soon as the ground is frozen hard, strawberry plants should be covered to protect them during the winter from alternate thawing and freezing. This may be done with any material at hand or the cheapest that can be procured. This may consist of straw or old hay, or evergreen boughs. The latter is the best for a small patch, but on a large field they would be expensive to gather and haul.

Be careful not to put the material, especially the straw, on too heavy. Enough to cover the green is plenty. If thrown down in bunches and not evenly spread it will smother the plants and be worse than none. There is no better covering for strawberries in winter than plenty of snow, but this cannot be depended upon in our climate.

Protection From Mice

A simple but effective method of protection against mice is the use of a decoy. Mice prefer young wood. They do not relish the bark around the base of a tree, when they can get at the young limbs and twigs. These they cannot reach without the aid of man. It is well, therefore, to feed them with young bark. Prune a portion of your trees in late fall or early winter. Leave the branches on the ground, but in the middle of the space between the trees. The mice will enjoy them, and leave the trees alone. Try the experiment, and tell THE CANADIAN HORTICULTURIST the result.

There are several other methods of protecting orchard trees from the depredations of mice. In localities where the snow falls early and remains on the ground all winter, the simplest preventive is to tramp the snow firmly about the base of each tree early in the winter. In places where the snow is not continuous, a mound of earth thrown around the base of the tree in the fall is generally effective. Another method that is cheap and satisfactory is to bind the tree to a height of about one foot with building paper or veneer before snow falls.

We try to manure our bearing trees while the snow and frost is in the ground, so as to keep them back in the spring. It keeps them back about two weeks, so the late frost does not kill the blooms. I have found this practice a success.—Isaac Smith, Northumberland Co., Ont.

Propagate the Grape When Vines are Dormant

GRAPE cuttings may be taken in the fall from wood of the past season's growth. The best ones are secured

A Display of Grapes

from vines that are well matured and short jointed. The length of the cutting is governed by the distance apart of the buds. Single bud cuttings may be used to propagate new and scarce varieties. Two or three bud lengths are used for the established sorts. Two bud lengths are desired by most growers, as more of them can be taken from a vine. Those of three buds are more clumsy to handle, but give stronger plants, as roots start from both underground joints. Mallet cuttings also may be used, but as only one can be made from a cane, and as the use of them interferes with good pruning, they are seldom adopted.

Tie the cuttings in bunches and store over winter with the butts uppermost, in sand, moss or sawdust. In spring they should be examined and, if the butts are not properly callused, they should be treated so as to hasten or complete the process. A trench should be dug in a warm spot in the garden or vineyard. In this place the bunches of cuttings with the butts uppermost. Fill the interspaces with some poor conductor of heat, such as sawdust, and cover the butts with an inch or so of warm sandy soil. This method may be practised, also, with cuttings that are not taken from the vines until late winter or early spring. In a short time, say two or three weeks, the butts will be well callused. Then, if all danger of frost is passed, the cuttings should be taken up and planted in a nursery row, preferably in light, sandy soil.

When transplanting to permanent quarters in the vineyard, some growers prefer one-year-old vines, while other prefer those of two years' growth. The proper age to transplant depends not only upon personal preference, but also upon the strength of the plant and upon existing local conditions as effected by climate and location. Two-year-old vines are the better of the two, if they have been left in the ground until they become of age, but this is not the customary practice amongst nurserymen. The two year vines offered by nurserymen are, in most cases, nothing more than the culls of the one-year-old stock replanted and allowed to grow for another year. Growers who desire good two-year-old stock can get it by doing their own propagating as here outlined.

When transplanting grape cuttings, it is customary to set the plants every 10 or 12 feet, in rows 10 feet apart. Two seasons after transplanting, they are usually ready to be trellised. The number of posts for the trellis is governed by the distance apart of the vines—usually one post for two vines. The number of wires depends upon the method of training to be adopted.

Winter Protection for Tender Fruit Trees

PROLONGED mildness in winter weather is as injurious to tender fruit trees as prolonged cold. During warm spells, the buds are induced to swell and, if not properly protected, a subsequent freezing will greatly injure, if not kill them. On the other hand, prolonged cold or severe freezing in itself is oftentimes the direct cause of winter injury. Between these two conditions of weather there is an optimum winter temperature for tender fruit trees, particularly the peach, which is one of the most susceptible to sudden changes. The optimum temperature for peaches is that condition or degree which will winter the greatest possible number of trees with the least possible loss. Unfortunately such ideal winter weather is seldom experienced in this country. It is necessary, therefore, to find some means of protection.

It is well known by those who observe that buds often burst into growth when the roots of the tree are frozen and inactive. The dark-colored twigs and buds of fruit trees, like all dark-colored objects, absorb heat rather than reflect it. For this reason, tender fruit trees are in danger of injury during mild winters. In the Niagara district the past winter did considerable damage in this respect.

Fruits and Flowers at the Ontario Horticultural Exhibition

A practical means of winter protection, originated by Prof. J. C. Whitten, of Missouri, and confirmed by W. T. Macoun, at Ottawa; Wm. Orr and Jos. Tweddle, at Fruitland, and others, is whitewashing the branches and buds. Whitewashing prevents the premature swelling of the buds as heat is reflected by whitened buds rather than absorbed.

Whitened buds will remain practically dormant, whereas unprotected buds frequently burst into growth during warm spells, as already mentioned. Experiments have shown that whitened buds blossom six days or more later than those unsprayed.

Whitewashing for winter protection should be done early in winter; apply two coats, and repeat as often as necessary to keep the trees white. Usually two or three sprayings are sufficient. The following formula was used in some experiments personally conducted by the writer at the O.A.C., Guelph, and gave good results: Lime (unslaked), 2 pounds; water, one gallon; skim milk, one quart; salt, five ounces. These figures merely indicate the relative proportions of a quantity sufficient to spray one good-sized peach tree. Slake the lime in warm water, stir to slake quickly and well, add the remaining ingredients, and mix thoroughly The skim milk is not essential, but it is thought to add to the effectiveness and adhesiveness of the material. When thoroughly prepared, strain the mixture through a fine-meshed sieve and apply hot.

The use of the lime-sulphur wash has a similar effect, but, as it is not applied until early spring, its value in this repect is not marked. Before the customary time for applying this wash, peach and other tender trees are liable to injury. For purposes of winter protection a lime wash must be applied in early winter and repeated often enough to keep the trees white.

Some City Garden Troubles*

AMATEUR gardening has its portion of troubles. Like the professional florist, the commercial fruit grower and the truck farmer, the amateur is occasionally the victim of adversity, due to inexperience, insect and fungous enemies, unfavorable conditions and other causes.

MEALY BUGS

On greenhouse and indoor plants, mealy bugs are troublesome. They derive their name from the fact that they are covered by a white, powdery substance, which is really a secretion of the insects themselves. By this characteristic they are easily identified.

Mealy bugs thrive best in a high temperature. Spraying with cold water usually will hold them in check. They are destroyed also by contact poisons. A dilute kerosene emulsion is satisfactory. Where the number of plants is small, they can be cleaned of the pest by touching the infested parts with a brush dipped in methylated spirits.

"AMERICAN BLIGHT"

On apple and crab apple trees in city gardens, where spraying is not practised, the woolly apple louse, or "American Blight," as it is called in England, may accumulate and do much injury. They appear like tufts of cotton attached to the leaves and bark. They secrete a fine cottony fibre, beneath which they are concealed. The eggs may be found singly in the bark crevices during winter. Where the cottony masses are too numerous to destroy by hand, the best remedy is kerosene emulsion.

CHERRY TREE TROUBLES

Like the commercial orchard, the city man's fruit garden has a host of troublesome pests. During the past season in Toronto many newly-set cherry trees did not do well, owing either to lack of proper attention or to insect and fungous enemies. To grow and thrive from the start, a cherry tree must be planted right. Long exposure of the roots to sun and air is injurious. The tree should be properly pruned when set. All ragged and bruised roots ought to be removed and cut off clean, and the tops should be pruned and thinned out to counterbalance the loss of roots. The hole to receive the tree must be large enough to take in the roots without cramping. It is necessary, also, to pack the soil firmly about the roots. Water poured into the hole will make the operation more safe.

The Cherry Aphis has done much damage on trees in Toronto gardens. Unless the owner is observant, the aphids multiply rapidly and badly injure the foliage before they are noticed. This insect winters in the egg stage, the eggs being laid on young twigs close to the buds. Trees that are badly infected should be trimmed thoroughly in winter and the cuttings destroyed. The eggs are of a reddish color, and can easily be seen upon close inspection. Where pruning or destroying the eggs is not desirable, much can be done by spraying the trees as soon as the eggs hatch in spring with kerosene emulsion—one part in 12 parts of water.

SALVIA SPLENDENS

The Scarlet Sage, *Salvia splendens*, is a well-known and popular tender perennial. It blooms late in fall and makes a fine effect in beds or borders. It is easily transplanted, and when removed to the house in fall, the plants continue in bloom for some time. Unless a rare strain or variety, it is not necessary to carry plants over winter. Should this plan be desired, it is best to take up from the garden early enough to make good roots; cut back to get cuttings, and later strike the cuttings in sand.

New plants may be got from seed. Sow in February. When seedlings are large enough, pot them. Good plants may be had in plenty of time for planting out in spring.

GROWING DAHLIAS

The dahlia is an old favorite. Even the formal flowered types have a place in the appreciation of many home gardeners. The loose-flowered forms and the improved single sorts are favored by everybody. The single varieties may be grown from seed, but the double sorts should be grown from cuttings of the young shoots or from division of the roots. If cuttings are to be made, it will be necessary to start the roots early, either in hotbed or house. The cuttings should be made when the growth is four or five inches long, usually May or June. Take care to cut just below the joint, as a cutting made between two joints will not form tubers. Pinch out the terminal bud. Start the cuttings in sandy soil near a fence or building. Later they should be transplanted to desired position in the garden.

The later that dahlias are started, the greater the chance of freedom from injury by the dahlia "bug." Late-planted dahlias produce the best blooms. They do best in cool, moist seasons. In dry seasons, the striped dahlia "bug" is most active. It is difficult to combat, but when conditions are unfavorable for it, such as inferred—cool, moist weather, and plants started late in season—it will not do much damage.

Dahlias flourish best in a deep, rich, moist soil. Clay should be avoided. Sandy soil will do, provided plant food and moisture are furnished. In most home gardens, the plants are allowed to reach their full height, and are tied to stakes. To grow them without stakes, pinch out the centre of each plant after it makes two or three joints. Thus, the lateral branches will be made to start near the ground; the plant will be stiff enough to withstand the winds.

After the first frost in fall, lift the roots. A little earth may be left on them, but it is not necessary. Let them dry for two or three days and protect at night with a covering of paper. Trim off the tops to within six inches from the roots. Store them in a cellar. Do not allow them to freeze, but keep them at a fairly low temperature. Canna roots may be treated similarly, except that, in their case, it is best to allow the earth to adhere. It prevents shrivelling.

*The topics that make up this article were discussed at a recent meeting of the Toronto Horticultural Society.

The Christmas Tree

E. J. Zavitz, O.A.C., Guelph

MOST Canadians have experienced the youthful pleasure of tramping out to find the Christmas tree. Through the snow and even the storm we have trudged to find a suitable tree in which Santa Claus could hang the gifts. Full of anticipation, this has been one of the most pleasant incidents of the Christmas season.

In those youthful days a small evergreen, like the walnuts and hickory nuts of the locality, seemed common property. To-day in older Ontario the ideal tree is almost extinct, and the small boy of the rural district has a great problem to find the Christmas tree of his dreams. The city children miss the pleasure of helping to cut and bring home the tree, but wake on Christmas morning to find one which has been delivered with the groceries the night before.

The Christmas tree seems to have been of German origin, and there to-day it has a more prominent place in the season's festivities than in any other country. Here in America many families use the gaily decorated tree in the distribution of gifts. Other devices have been introduced, as Santa Claus coming in with a loaded pack upon his shoulders, or a mysterious pie is opened and the gifts taken from it. In Germany, every family, however poor, must have a tree. These are not always large, and they vary in decorations according to the taste or financial condition of the home in which they are found. No presents are placed on the tree, for they destroy the beauty and grace of its appearance. These are placed on a table near at hand. There are always candles which, on Christmas eve, are lighted as the family gathers around. The trees are usually kept through Christmas week, and if they are small may be seen placed on a table near the window of the home.

The Christmas tree idea has been enlarged in Canada so that, in many churches, the Sunday school department holds an entertainment, the chief feature of which is the distribution of gifts from a very large Christmas tree. The tree in this case is a very large Norway or native spruce.

While the Christmas tree exists in England, the holly, ivy, laurel and mistletoe are favorite decorations for the Christmas season. This custom of decking the houses and churches with evergreens is derived from ancient Druid practices. It was thought that the sylvan spirits would flock to the evergreens till the cold season had passed.

By the middle of December, in Canada, the city dealers begin to display their stock of Christmas evergreens. These consist of white cedar, juniper, spruce, balsam and hemlock. These trees are sold in sizes ranging from five feet to even 20 feet in height. Along with the trees or a little later comes other decorative material as club moss, ferns, holly and mistletoe. Of our native evergreens, the spruce and balsam make the best Christmas trees, as their branches are regular and formal. The cedar, juniper and hemlock are better for pulling apart to make wreaths and other hanging decorations.

The Wonderful Doings of Santa Claus

The demand for Christmas trees and decorative material has developed a business which has assumed an important character. Long before Christmas, trainloads of evergreens are being shipped into the larger centres. To-day the well-shaped tree of 6 or 10 feet in size is becoming scarce. Complaints are heard that the material is too expensive to be used as in days gone by. The trees of best quality, which grew near shipping points, are exhausted, and dealers have to bear the cost of longer hauls.

Here is an opportunity for landowners in the vicinity of large towns and cities. Nurserymen in the United States are growing evergreens for Christmas purposes at a nice profit. Why not plant some of the waste portions of the land with evergreens as an investment? Marketable trees can be grown in from 6 to 10 years. The prices are going to advance, especially for well formed, symmetrical trees.

Some sentimentalists have condemned the cutting of Christmas trees as wanton destruction of forest growth. This is a mistaken attitude. Let every home have a Christmas tree. No better use of a tree can be found than in giving the child a heritage which meant so much to us. It is part of the birthright of childhood, and should be denied to none. Blessed is the man who still holds the memories of Santa Claus and of Christmas customs as worth while!

Sprays of the common barberry may be used for Christmas decorations. The drooping clusters of scarlet berries are effective in any scheme of ornamentation that may be proposed for the home, the church or the hall.

Japanese Lilies

MANY bulbous plants can be used to advantage in winter, while others should be started in the early winter months to present the most pleasing appearance in the beginning of summer. Amateur flower growers can frequently obtain surplus stock of Japanese lilies as late as January, but it was advisable to obtain them earlier. As a rule the experienced grower of bulbs purchases his Japanese lilies late in November or in December.

In every case good, sound, solid bulbs must be procured. Some interesting information concerning their growth was furnished THE HORTICULTURIST recently by Mr. Wm. Hunt, of Guelph. They should be set singly in six or seven inch pots as soon as they arrive. A light and fairly rich loam potting soil is recommended. Perfect drainage is essential. After being potted, a liberal watering should be given, and the pots set in a room with a temperature of 55 to 65 degrees. Success is common in ordinary window conditions. For the next two or three weeks scanty watering is all that is required. It is well, however, to keep the soil moist.

When top growth is well commenced the supply of water should be increased, and under no conditions should the pots be allowed to become dry. The leaf growth should be well sprinkled at least once or twice every week. When a height of ten or twelve inches is reached the plants will grow to one side or break off at the base if they are not carefully staked. If the soil is in right condition no liquid fertilizer is required. The addition of fertilizers causes too rank growth and often induces disease. Sufficent extra nourishment is obtained from the bulb.

When warm weather comes the beauty of the garden can be greatly increased by setting these Japanese lilies outside. About June 1 they can be taken out of the pots and put in some well-protected place, where the wind will not have a chance to destroy the plants. Special care must be given to the staking after they are set out. In many cases they are not taken from the pots. The pots are plunged to the rim. When handled in this way bloom will come by July or August. If started before January the plants will flower earlier in the summer.

The three best varieties for ordinary culture are Lilium speciosum rubrum, red; Lilium speciosum album, white; and Lilium speciosum auratum, golden banded lily. The rubrum is hardy and most easily grown. With most growers it gives better satisfaction than the other varieties.

This plant is not without its enemies. The most common insect pests are green fly and red spider. The plants can be protected from injury by the green fly by frequent dusting with finely powdered cigar. The red spider is easily kept in check by liberal sprinklings of clear water.

Three Crops of Roses

W. Hunt, O.A.C., Guelph

I was pleased to read in the September HORTICULTURIST the interesting notes on the rose bush owned by Mrs. A. Thompson, of Erin, Ont., and of its producing the two crops of blossoms in one season. The rose bush mentioned is in all probability an old-fashioned rose known as "Setina," supposed to be a sport from the well-known old Bourbon rose "Hermosa." The rose Setina is known in and around Toronto as Mansfield's Seedling or, at least, the two were considered to be identical about 30 years ago, when it was very commonly grown as a greenhouse trellis rose, being under greenhouse treatment, of a semi-climbing habit. In color it is more of a rose pink, a shade darker than Hermosa, and has a delicious perfume that Hermosa has not.

A Sample of the Bloom

I have a small bush of the Setina rose growing in my flower border at Guelph, that at the time of writing, September 10, has a few buds on it. The parent plant of this one was taken to Hamilton by me from Toronto in 1880, and planted in a warm border facing the south. It flowered, as stated, in June and again in the fall, and I remember one particularly mild winter, picking a fairly good rosebud from it on Christmas day. The plant was never artificially protected in winter and, although the tips of growth were killed back, it sprang up strong every spring from down near the ground. The bush in Guelph was struck from a small branch accidentally broken from the parent plant in early summer, and stuck in the ground in the open border. This plant has had no protection given it, except by the snow, for the past three years.

I am almost certain the rose mentioned as growing at Erin is the variety known as Setina, and I am pleased to find it is hardy so far north. I should like at some time to see a few leaves or a bloom from the bush in question, as I consider it a very valuable rose for outdoor cultivation, being a fairly good flower in substance, size, and color, and deliciously perfumed, as well as an ever-blooming and hardy nature; a very useful, pretty, free-blooming summer rose.

NOTE—Since the article on the rose that bloomed twice appeared in the September issue of THE CANADIAN HORTICULTURIST, a third blossoming took place, a bloom of which was received at our office. A cut illustrating it is published on this page. Besides the foregoing remarks by Mr. Hunt, THE CANADIAN HORTICULTURIST received the following letter from Mr. Francis Wayland Glen, of Brooklyn, N.Y., a gentleman who at one time was closely allied with horticultural interests in Canada. He is a life member of the Ontario Fruit Growers' Association.

"When I resided in Oshawa," he writes, "I always had three crops of General Jacqueminots, Crested Moss and White Moss. The plants were upon their own roots.

"As soon as the June roses were past their prime, I cut the plants down to the ground and grew new wood. When that wood was 2½ feet high, I pinched the top off, and that forced the canes to send out new branches, upon which I got fine clusters of roses in August. Then I repeated the process and had a third crop. This crop I had to protect against early frosts.

"In the fall, I again cut the bushes down to the ground. I gave them a coat of compost from spent hotbeds; then covered them with leaves.

"My roses were superior in size, in beauty of color and in foliage. I never lost a plant."

A popular and satisfactory plant for the house is the Rubber Plant, *Ficus elastica*. It is tough and thrifty, yet there is a limit to its endurance; it does not like gas. The Rubber Plant will stand a fairly low temperature where the air is pure. Do not give too much water, and keep the plant in the light. Keep the leaves free from dust and insects by sponging with soapy water.

Christmas Greens Make Christmas Merry

WHAT is Christmas without Christmas greens? Half the sentiment and the charm of the festive season is associated with the use of greens in the home. They contribute more than all else to make Christmas a time of good cheer.

The mistletoe, as a Christmas decoration, seems to be indispensable. In the

Under the Mistletoe

'Hang up Love's Mistletoe over the earth
And let us kiss under it all the year round;
Hail it with joy in our yule-lighted mirth,
But let it not fade with the festival sound."

past it has been associated with many superstitions and highly extolled for its medicinal purposes. Legends of Scandinavia associate the mistletoe with Freya, the goddess of love and beauty. From this sentimental association arose the custom of suspending the mistletoe in halls and drawing-rooms with the privilege that custom confers. Even to the present day the idea of a kiss under the mistletoe bough has not lost its ancient mystic meaning as a glance at the scene on this page readily shows. Let us not forget the custom.

From whence comes the mistletoe? It grows as a parasite on trees, preferably the apple. The American mistletoe is found from New Jersey to Florida, and is shipped to northern parts during the holiday season. The eastern cities of Canada and the United States use small quantities of mistletoe, brought over from England and France. It is liable to injury from frost, but being more showy, and having larger berries than the American sort, it has greater decorative value.

Another important Christmas green is Ilex, or holly, of which there are many species and varieties, comprising both deciduous and evergreen shrubs with many colors of fruit. The common American holly is found in dry and barren fields from Maine to Florida. It differs from the English holly in many respects. It is hardier but less handsome, leaves are more oval and not so waved and crinkled; fruit, a dull, deep scarlet, and usually solitary; while in the Old Country holly the berries are bright and shiny, and occur in clusters. English holly is imported into Canada occasionally, but seldom with commercial satisfaction. In this country we have no true native holly, but a closely allied species is the winterberry, found in our swamps and low grounds.

Lycopodium (also known as ground pine or club moss) is one of the oldest and most common of our decorative materials. The best of this is found in moist woods and rough, spongy swamps. It is found in drier situations also, but of a lighter and yellowish color. Selaginella is sometimes mistaken for lycopodium, but, as the latter is identified by the coniferous habit and the single form of its capsules, they can readily be distinguished.

The leucothoë, or "branch ivy," is coming rapidly into favor as an artistic bit of greenery. For grace and elegance it is unsurpassed. For making up designs, sprays of leucothoë are often used in connection with galax leaves. Its native haunts are the moist ravines of the southern states, but some of the hardier species are grown in Massachusetts and western New York.

The pretty little galax, or "colt's foot," with its rich-hued leaves, tinged with shades of red and bronze, is another recent decorative introduction. Galax leaves have largely displaced the English ivy, as it furnishes long, wiry stems, is less expensive, and is easier handled and kept. They make beautiful wreaths, crosses, and other designs for holiday purposes. In spring they are used for bunching violets and mayflowers. They are gathered in the mountains from North Carolina to Georgia, and are shipped in large quantities to the cities and towns of the north.

Another highly-prized green is the wild smilax that comes from Alabama and Georgia. Like the mistletoe, it requires a little attention to prevent injury from frost. When used for decorating, its luxurious festoons are charmingly free and striking. Besides this and some of those already mentioned, the south contributes palm leaves, dagger ferns, magnolia branches, and Florida moss, with individual characteristics, peculiar in themselves, which are effective for special purposes.

The north also contributes its share of Christmas greens in hardy ferns, needle pines, hemlock clippings, and many others. Clippings of cedar, hemlock, and yew, for roping and massing in large churches and halls, are used with effect and economy. Our common hardy ferns gathered from the woods give strength, when well arranged, to any plan of Christmas adornment. For the sake of contrast and variety, branches from some of our hardy decorative shrubs may be used. For this purpose, the bright scarlet berries of the burning-bush are particularly desirable.

One of the most appreciated of all the Christmas greens is the Christmas tree, as it plays the most conspicuous part in the all-pervading fun and frolic of the occasion. A favorite Christmas tree is the balsam fir. Certain types of spruce and other conifers also are in demand. The fir is favored for its pyramidal shape. When young it is very striking and pretty, with its

Galax Leaves are Excellent for Christmas Decorations

branches regularly whorled and leaves dark green and whitened on the under side.

In the associations and traditions of that historic individual, coming from the snowy woods, bearing upon his genial shoulders the tree, laden with good things and glittering with lanterns,

A Spray of Leucothoë

the Christmas tree are centred the cheery and buoyant side of the festive season. Prominent among these is that youthful antiquity, Santa Claus. The tales of touches in the hearts of the children a note of Christmas sentiment that will never die out so long as this great annual festival is observed.

Late Flowering Orchids

F. J. Goode, Toronto

LÆLIA *purpurata* and *Lælia grandis*, the subjects of the accompanying illustrations, furnish us with two orchids of exceptional merit. The first

Lælia Grandis

mentioned is one of the grandest and most magnificent, while it is one of the most robust and easily grown. The bulbs are fusiform and furrowed, often measuring 15 inches in length, and it has oblong, light green leaves. Strong, well-ripened bulbs will throw from three to five flowers, which, for form and coloring, are hard to beat. Sepals and petals, pure white; the lip has the base lobes folded over column; throat, yellow, striped with purple. Individual flowers are often five and six inches across. It is one of the latest flowering lælias.

Lælia grandis, white flowering, about the same time as the former, is more singular and distinct. The bulbs measure between eight and ten inches in length, surmounted by a single, oblong, acute, green leaf. It has free-flowering sepals and petals with a dark fawn throat. Magenta rose produces flowers four to five inches across. This variety will last in flower for three weeks, if kept free from damp; but, owing to its lack of white, it will never become a commercial rival to the Cattleyas. It is, however, deserving of a place in every collection. Both varieties thrive well in the Cattleya house, and are excellent for large specimens.

Good, fibrous peat, fresh sphagnum moss, charcoal and broken crocks, form the best potting material for these plants. After the plants have finished flowering, remove dead moss from among surface roots, fresh moss being pressed firmly wherever live roots are exposed. Syringe lightly night and morning during hot weather. This will help the plant to start, and will also take away that shrivelled appearance caused by keeping the plants on the dry side till flowering is over. It is best to keep late flowering orchids as much to themselves as possible during early spring months, as too much water often causes the plant to start its new growth, which, in nine cases out of ten, prevents the plant flowering.

As soon as the new growths are about two inches long, water may be given more freely. It is generally conceded by orchid growers, that no fertilizer may be applied direct to the plants. Taking this for granted, the next best thing, and the one usually followed, is to throw liquid manure on the floors, or benches, amongst the plants. Cow or sheep manure will do. This should be done when closing the houses for the night, thus creating a moisture and retaining the strength of the fertilizer, which is essential to orchid life. If this treatment is followed for a few weeks, the difference in the appearance of the plants will be apparent.

These varieties, flowering so late, often the middle of June, leave only three or four months to make their new bulbs. The more attention you give to these plants during that time, the better you will be rewarded by having good, strong bulbs. These mean plenty of the most beautiful flowers grown the following

Lælia Purpurata

spring, which will recompense you for the extra trouble you have taken.

If you subscribe for THE CANADIAN HORTICULTURIST on the 13th of the month or on any other day, you will be lucky every day that it continues to come.

Timely Topics for the Amateur Plant Lover

WHAT gifts shall I give my friends for Christmas? is a question that comes to each of us in December. If you want to select something that will last until the return of Christmas another year, and longer, why not give growing plants? Make your selections a week or more before the holidays. An early selection means a greater variety to choose from. Do not buy a plant that has every flower expanded. Select a plant with only a few of the flowers open. The remaining buds will open in due time and the effect will be prolonged.

The First Prize Decorated Dining Table at Ontario Horticultural Exhibition

One of the best flowering plants for Christmas is the Gloire de Lorraine begonia. It is always in bloom. Among the many plants suitable for Christmas presents are "Baby Rambler" roses, cyclamen, Jerusalem cherry, genistas, potted bulbs, primulas, azaleas, rubber plants, araucaria, poinsettias, screw pines, and a host of others.

Books on gardening or fruit growing are acceptable gifts. There are many works on horticulture that are not only practical but interesting, and nicely bound. THE CANADIAN HORTICULTURIST has issued a book catalog. You may have one free by making application.

THE WINDOW GARDEN

Do not keep house plants in an atmosphere that is too dry. Moist air and intelligent watering at the roots are necessary to attain success in window-garden work. Some plants require only a limited amount of water; among them, cacti, century plants, hydrangeas and oleanders.

Potted bulbs should not be allowed to become dry at the roots. Freesias require a fair supply of water when top growth has well started.

Are you growing some bulbs for Christmas gifts? Watch them closely. Keep them well watered and not too warm. They like plenty of sunlight above and a cool temperature at the roots. Think of the natural conditions in which they grow best outside. The same applies to house-grown ones.

In order to grow plants well in the house they must have plenty of light. The best exposure is a southern one; the next best, an eastern. Geraniums, lantanas, heliotropes and all plants that love much sunshine should be in the south window. Begonias and plants that care more for the sun in the early part of the day than they do after its rays become more intense, do best in an eastern exposure. A west window gives too much heat, but, if you desire to grow plants there, the heat can be tempered by means of a curtain of thin muslin. A north window is not suited to the needs of flowering plants, but some foliage plants can be kept there, viz., ferns, palms, aspidistra, ficus, lycopodiums and tradescantia.

Avoid draughts of cold air on plants, as they check the growth and often induce attacks of mildew. It is well to ventilate on calm, warm days

If your plants require repotting, do not make the mistake of using a pot four or five times larger than the one in which the plant now grows. Two sizes larger is sufficient.

Newly potted plants should be watered once as soon as potted. Give sufficient water to moisten all the soil in the pot. Do not repeat the watering until the soil shows signs of dryness.

VEGETABLES AND FRUIT

Prepare the hotbed and cold frame for next season's use. Remove the old soil and manure. It is easier done now than in spring. Store some fresh soil for use when the time comes.

Store the garden tools before the snow falls. Make everything about the garden snug and secure.

Onions for winter use should be stored in a dry, airy place. It is best to keep them out of the cellar. Parsnips, carrots and beets may be stored there and covered with sand to prevent wilting.

Keep a close watch for rotting fruit and vegetables in the cellar. If given a good start they will cause the loss of much that is now sound. Frequent sorting and the most careful handling should be the rule. Bruising from careless handling is the cause of most of this trouble.

THE OUTDOOR GARDEN

Beds of newly-planted bulbs should be covered with a mulch. Strawy manure or spruce boughs make good material. A covering of leaves with brush to hold them and to catch the snow, is excellent for the purpose. See the illustration on this page.

Ready for the Winter

Tender and half-hardy perennials will be benefited by the application of some light protective material. Lilies of all kinds should have a good mulching of manure, especially the Japanese varieties. While the hardier types do not re-

quire much protection, they are benefited by the fertilizing effect of a manure mulch.

Make a compost heap of the fallen leaves. Leaf mold is not rich in plant food, but it is excellent for improving the texture of the soil. You will appreciate it when you come to make flower beds and pot bulbs next fall.

Two Mertensias

Roderick Cameron, Niagara Falls, Ont.

There are several varieties of the mertensia in cultivation, of which *Mertensia Virginica*, also called Virginian Cowslip, Blue-Bells, and Virginian Lung-wort, is probably the showiest; but on account of its short duration of bloom, the preference must be given to *Mertensia Siberica*. The foliage of *Mertensia Virginica* dies down and the plant disappears from view shortly after flowering. This necessitates the plants being kept well staked, that their whereabouts may be kept in view and to prevent the destruction of the roots when digging the border. On the other hand, *Mertensia Siberica* lasts longer in bloom, and it holds its foliage all summer. The plants are taller and the flowers lighter in color. The flowers of the former are about an inch long, deep blue, and are produced in clusters of about 20 blooms each, drooping to one side. The plants grow from one to two feet high, and are among the choicest of our garden perennials that belong to the Borage Family.

Virginian Cowslip

The mertensias should be propagated by seeds, sown soon after being ripe. The roots will not divide well. The planting of them may be done any time after they die down, but not late in the fall; better wait until early spring. A few stones placed around the plants on the surface of the ground is beneficial to keep the roots cool and damp during hot weather.

The Amateur Greenhouse

ARE you growing palms in the greenhouse? To induce a rapid growth use nitrate of soda applied weakly at first, and once or twice a month.

The Table that Won Second Prize

As your callas will be making plenty of roots, do not stint the water supply.

Keep the weeds down, as they encourage the red spider, aphids and other insects. If you are trying sweet peas inside, look out for the little green worm and kill him, or trouble will result.

Keep the leaves of plants away from the window glass. It doesn't look well, and sharp frosts may injure them.

A small aquarium filled with aquatic plants is a nice feature in the home greenhouse. Gold fish in bowls also can be kept there.

Be continually on the watch for aphids on roses. They are among the worst pests of the greenhouse. Fumigate as soon as they are seen.

At this time of year, sow-bugs or "wood lice" appear in numbers under shelter of pots and other material. Treat them with a mixture of corn meal and Paris green.

Geranium cuttings are weakened if the flower buds that appear on them are allowed to open. Keep the buds regularly picked off and the cuttings will do well. Growers of bedding plants who put their zonal geraniums into two-inch pots in September should now see that the plants are stood over and that the surface of the soil is stirred. This is easily done. All that are going to root will have done so by this time. Remove the dead ones so as to give more space between the pots containing those that have come on well. Loosening the surface soil in the pots is like hoeing or cultivating the soil in the outdoor garden. It allows the air to enter and prevents too rapid evaporation of moisture.

Begonia Gloire de Lorraine, intended for Christmas, will be sending up the growth that will make it a serviceable plant at that time. Now is a good time to do the tying that is necessary. Three or four small stakes may be used and the plants surrounded with a strand of silkoline. Some growers prefer one stake in the centre of the plant and the branches supported by similar material.

Paper white narcissi should be in now on the bench and in full light, and where the temperature is about 50 deg. at night. Roman hyacinths, also, should be in full light. They should be allowed six weeks to come into flower. Keep them where the temperature is 60 deg. at night.

Gloxinias may be grown in the window garden, but they are better adapted to greenhouse culture. They will not stand varying conditions. They are sensitive to cold weather and draughts. Water should not be applied to the leaves. Gloxinias must have plenty of light, a uniform moist and warm atmosphere, and protection from the direct rays of the sun. The soil should be porous and rich.

All temporary structures, such as potting benches, that were prepared for summer use outside, should be taken down and the material stored away.

Watering Plants in Winter

Wm. Hunt, O.A.C., Guelph

IN watering house and window plants only the best water should be used. Tepid water at a temperature of about 50 degrees gives best results. Pure fresh rain water is most desirable for the purpose, and in no case should water from a dirty cistern be used. If water from a spring or well must be used, it should be allowed to stand in a tub or pail a day or two.

Avoid using ice cold water. Mix some warm water with the cold so as to make it lukewarm. Sprinkle the foliage of plants only on warm sunny days. Rex begonias and similar rough or hairy leaved plants should not have their foliage sprinkled at all in winter.

Palms, draçænas or cordylines, Ficus or rubber plants, Farfugium or leopard plant, English ivy, aspidistras, and similar glabrous or glossy leaved plants should have the leaves sponged with clear water once a week. A little common soap, or, better still, a little fir tree oil mixed with the water will improve the appearance of these plants and help to keep down scale and other pests. The fir tree oil must be strongly diluted as directed on the bottle, as it is sure to injure the plants if very strong. Avoid using chemically prepared soaps and similar preparations, as they are dangerous and often fatal to plant life

Onion Culture for Profit*

T. Delworth, Weston, Ontario

FOR profitable onion growing, select a soil containing rather more sand than clay, clean and free from stones and other obstructions to cultivation. The location should be cool and damp, yet free from stagnant water either above or below the surfa e

We will assume that the soil is in good tilth, having had clean cultivation and been well manured for some years previous. An attempt to grow onions for profit would be useless unless soil in that shape were available for the purpose. Start operations in the fall by applying a good dressing of stable manure, say 40 or 50 tons an acre, and plow it under. Let it freeze up for the winter without harrowing.

In spring, as soon as the soil is dry enough to work, go over it with a spring-toothed cultivator or disk harrow; thoroughly stir and pulverize it to get the manure well incorporated with the soil. Harrow as fine as possible, and if the soil be dry enough, finish with a planker. Then drill in the seed.

At this point there is an important question to decide. Where land is cheap and labor scarce, some growers adopt the plan of throwing the soil up in light ridges about 24 inches apart, sowing the seed on those ridges and cultivating with a horse. For market gardening in close proximity to large cities where land is expensive, in a high state of cultivation, and rich from many years of heavy manuring, I consider that method wasteful of the land. I prefer to get the soil as fine and level as possible, and then drill in the seed in rows as straight as may be done and about 15 inches apart, using about 6 pounds of seed to the acre, and then cultivate with a wheel hoe.

The selection of varieties is a matter that may be affected by local market conditions. In Toronto, an onion is wanted with a bright, yellow skin and white flesh. In some cities a fair demand exists for red onions, but there is little or no demand for them in Toronto. Onion growers practically are unanimous in the opinion that, as long as seedsmen will give them a good strain of seed of Yellow Globe Danvers, they are getting the best onion on the market for ordinary domestic use.

CULTIVATION

As soon as the seed is up so that the rows may be seen, start the wheel hoe.

White Globe Onions

Use the flat cutting blades and keep them sharp. Cultivate shallow and frequently. Follow with hand-weeders and clean out the rows. For this work I prefer a weeder that we make ourselves out of a table knife, heated and bent round and sharpened on both edges. Don't allow the weeds to get large. A few days' smothering at this stage will do the crop irreparable damage.

Should thinning be necessary, do it with the weeding knife while they are small. Onions do not take kindly to being loosened at the roots in warm weather. It stunts their growth. Keep the wheel hoe going till the onion tops get so large that you can't get through them. Then use a flat or Dutch hoe, and be careful not to cut the onions. Cultivate often and very shallow. Keep the hoe sharp and barely skim the surface.

DISEASES AND INSECT PESTS

The onion crop has at least two enemies that are sometimes very destructive. The first is the Root Maggot. This insect usually does its work in the month of June or early part of July. Various methods of combatting it have been suggested, but so far no practical and reliable remedy has been found. It is usually worse in light soils. Its method of injuring the crop is too well known to need description.

The other trouble is known as Onion Blight. It is a fungous disease that appears usually in August when the onions are about half grown. It shows as patches of grayish-white mildew or mould on the foliage. The foliage turns black and dies where the blight appears. The disease spreads rapidly, a few days being enough to turn a mass of healthy foliage into a few dried and blackened tufts. Spraying with Bordeaux mixture has been tried without much success. The writer made a few experiments last summer with dry air-slacked lime and sulphur (1 oz. sulphur and 5 or 6 oz. lime) dusted over the onions while wet with dew. The results were encouraging but not conclusive. Next year the experiment will be repeated.

HARVESTING

As soon as the onions begin to ripen, pull them at once. The time may be determined by pulling a few. When an onion completes its growth, the roots begin to die and they lose their hold on the ground. The onions pull easily. Onions becomes spoilt for keeping if not harvested promptly. Pull and lay in windrows. Turn several times in the sun until dried. Then, if wanted

*The essay on onions that won first prize in the Ontario Vegetable Growers' Association's competition.

for long storing, carry them in with the top that does not break off in handling still adhering to them. They keep better when stored in that way.

As they can be topped when they are picked up in the field quicker than at any other time, those that are wanted for immediate use should be tipped as they are gathered. Never handle onions when wet. Store in a dry and cool place. Do not store in deep piles. I have kept them in good shape until April when spread out five or six inches deep on shelves in a dry cellar.

Vegetables for the Christmas Market

E. E. Adams, Leamington, Ontario

IN many places, very little attention is given to the subject of Christmas vegetables. If we go to some stores in which vegetables are sold, and look at the "display" as we may call it, we are not enticed to give our order because of the untidy or unclean appearance that they present. This method of presenting goods for sale is far too backward and must be remedied if the grower is to reap a fair reward for producing his crop. What is more unpleasant for a would-be purchaser of vegetables than to find them exhibited for his or her approval in a dirty condition?

Many growers have no taste for presenting to their patrons their products in a tasty manner. If, on offering them for sale, they are unable to command a good price, in many cases the fault lies with themselves. Every dealer is, or should be, desirous of procuring first-class vegetables, well put up, clean, and of fine size. When they are put up in attractive shape, he will pay a better price than if they are offered in the unclean condition in which they come direct from the soil.

This applies especially to Christmas offerings. The consumer, at this season of the year, is looking for the best that can be got. The coming Christmas dinner must be something out of the ordinary. It must be one of the best of all the year, and it usually is. Celery, parsnips, rutabaga turnips, onions, parsley, lettuce, tomatoes, cucumbers, Hubbard squash and sweet and Irish potatoes, all are valuable for the Christmas dinner.

Celery should be well washed, cleaned thoroughly and put up in half-dozen bunches or heads and tied with a nice blue ribbon, which contrasts nicely with the white celery. This bunch looks well, sells well, and is a handsome-looking article. Lettuce is usually sold at this end of Ontario by the pound. It is sometimes pulled up by the roots and well washed, the roots being left on; but if the roots are cut off, a much more presentable article is obtained. Turnips, parsnips and potatoes may be well washed, although potatoes might be left off the list. The others should be well cleaned and stripped of small rootlets, so as to present a tasty appearance Well-formed specimens of fair size should be used so as to have a uniform grade. Hot-house cucumbers, lettuce and tomatoes are in evidence at this time. Tomatoes should be shown in a small package similar to the southern carrier with lace paper edging. They should be well ripened to the stem, showing no green spots. They are a good selling article at this season of the year, if properly put up.

The grower of vegetables can add considerably to the appearance of his goods by having a good team, harness and wagon. He also should be particular in regard to his own appearance. The grower will be well repa d for all the attention and trouble that he takes to present his goods to the consuming public in a tasty manner.

Make a Mushroom Bed in the Cellar

Mrs. E. C. Bennett, Thornbury, Ontario

MANY persons think that it is difficult to grow mushrooms, but such is not the case. They are easily grown if you have good fresh spawn and fresh manure, both being essential for producing good mushrooms.

Try growing them in a large box in your cellar. That is the way I started and I have had the best of success. First get some fresh horse manure, say two or three wheelbarrow loads. Place it in a pile in a stable or a shed, and let it remain for two days; then turn it well every day until the mass is cold and let it stay for three days. It should then be cold; if not, turn again and let remain for three days more. By that time, it will be ready for making into beds.

Pack the manure to a depth of 14 inches in the box and let it remain for nearly a week. If you find that the heat is over 100 degrees, let it go down to 90 or 80. Then spawn the bed by putting pieces of spawn nine inches apart each way. Press the bed down firmly and let it remain so for 10 or 12 days. Then put on about two inches of good garden loam and again press firmly. On top of this put some straw or soft litter. In four or five weeks the mushrooms will begin to appear. When first seen, sprinkle the bed well with warm water. Place a handful of salt in each pail of water. Wet the soil well on top, but not enough to reach the manure, as that will kill the spawn.

Any amateur can make a bed like this. There is no mystery about it. Without good, fresh spawn, however, profitable beds cannot be had, as that is the only secret in mushroom growing.

Mushrooms that Won't Stop Growing

A bed that had grown mushrooms in a cellar for one year was thrown out in the garden and covered with fresh soil. In two weeks' time large luscious mushrooms sprang into existence. The photograph was taken at the home of Mrs E. C. Bennett, Thornbury, Ontario.

In the article by Mr. A. McMeans, O.A.C., Guelph, that appeared in the November HORTICULTURIST, he was made to say that poor selection of seed causes "rottenheart" in celery, instead of "hollow-stalk." It was an error on the part of—let us say—the printer's devil.

The kind of soil has much to do with the prevalence of blight in celery. Clay soil seems to induce blight more than any other kind. On black muck it is not so bad. Extremes of both wet and drought are unfavorable. Cloudy, warm weather is effective in causing this disease.—E. Gibbard, Todmorden, Ont.

OUR QUESTION AND ANSWER DEPARTMENT

Readers of The Horticulturist are invited to submit Questions on any phase of Horticultural work

What is a Fruit?

Is the tomato a fruit? The September HORTICULTURIST infers that it is. I classify it as a vegetable. Please define the word "fruit."—B.E.M., Wolfville, N.S.

From a strictly horticultural standpoint, the word "fruit" cannot be defined. Botanically, a fruit is the ripened ovary with such organs as may adhere to it. A well-known authority states that a fruit, in the popular sense, is the fleshy and juicy product of some plant, usually tree or shrub (and nearly always containing the seed) which, when ripe, is *edible without cooking*, and adapted for use as a dessert rather than as a salad. This would include the tomato and exclude the quince and the cranberry. Perhaps some of our readers will venture to coin a perfect definition. Let us hear from you.

The Niagara Peach

Is the Niagara Peach a good variety to plant for commercial purposes?—A.M., Vineland, Ont.

The Niagara Peach has not been tested to any extent in Ontario. In New York State some of the best growers claim that it is a good one. It comes in about the same season as Elberta and is equal to it in size, color and thickness of skin. In flavor it is on a par with Crawford. The Niagara peach should be tried in all our peach districts.

Cherry Scion on Plum

Will cherry graft on a plum tree be satisfactory as a bearer of fruit ?—Subscriber, Clinton.

It would be difficult to make the cherry scion grow on plum stock. The density of the two woods and the habits of growth are so different that even if it grew it would never be a complete success unless as a curiosity.—Answered by L. Woolverton, Grimsby, Ont.

Sterile Strawberries

I have a patch of Irene strawberries. They bloomed well but did not set fruit. What is the reason?—W. B. A., Lindsay, Ont.

Strawberry blossoms are of two kinds, perfect and imperfect. Irene belongs to the latter. Dig up and plant every third row with some perfect flowering variety like Williams, or, plant a new patch similarly planned.

The Garden Huckleberry

Is the garden huckleberry of value either as a domestic or commercial fruit?—J. S., Prescott, Ont.

This fruit is not a huckleberry. It is closely related to the deadly nightshade, which has until recently been considered poisonous. The garden huckleberry is not poisonous, however, like some other plants of the same genus, *Solanum*, notably the tomato and the potato. It is easily grown, productive, and quite hardy. The berries are not edible without cooking. In seasons when fruits for preserving are scarce, the garden huckleberry will be appreciated in the home garden. It is not likely to be of commercial importance.

Apples for New Ontario

Is it possible to grow apples in New Ontario? What are the best varieties? Is spring or fall the best time to plant black currants?—J. M., North Bay, Ont.

Apples can be grown in that district but not with commercial satisfaction. Only the hardiest varieties will withstand the severity of the winters, and most of them are not the leading commercial sorts. Among those that have done fairly well are Yellow Transparent, Charlamoff, Duchess, Wealthy, Hibernal, Longfield, Patten and Scott's Winter. The Whitney and Hyslop crabs also can be grown with success. Currants start into growth so early in spring that it is best to plant in fall. They are hardy, and may be planted at either season.

Growing Muskmelons

What should be done to prepare gravelly soil for a few hills of muskmelons in a private garden? Is Paul Rose a good red-fleshed variety for the purpose?—M. J. T., Niagara Falls South, Ont.

Manure with well-rotted compost this fall. Plow or dig late as possible before freezing, and repeat the work in spring. There is no better salmon or red-fleshed melon than Paul Rose for quality.—Answered by W. A. Emery, Aldershot, Ont.

The English Ivy

Is the English Ivy grown as a decorative plant in America?—L.A., St. John, N.B.

The English Ivy is cultivated in some parts of America, even in the north, when protected in winter, but its part in the rôle of decorating is a small one. Such vivid contrasts of color in foliage and such a wealth of Christmas associations is possessed by no plant as the ivy, "To which the ghost of all the storied past alone tells its tale of departed greatness; the confidant of old ruined castles and abbeys; the bosom companion of solitude itself. True to these instincts, the ivy does not seem to be naturalized so easily in America as most other vines. We are yet too young —this country of a great future and a little past." For covering walls in greenhouses, for screens in drawing-rooms and for hanging baskets, it is a valuable plant. The ivy that is most used in America for decorating is a shrub of the Southern States.

The Rosemary

In literature dealing with old-fashioned Christmas customs, we often read of the rosemary. What is it?—E.L.B., Stratford, Ont.

The rosemary of old England, so largely used at one time in the appointment of the Christmas feast, grows wild in some parts of that country, but is native more particularly to the Mediterranean region, especially the chalk hills of Southern France. With it are connected many superstitions, as: "The rosemary, which was anciently thought to strengthen the memory, was not only carried at funerals, but also worn at weddings." It is a hardy evergreen shrub with aromatic leaves, which are sometimes used for seasoning. The wild rosemary of Canada, a species of Labrador tea, and the sand-hill rosemary of the south, are quite distant from the true rosemary.

Laurel or Sweet Bay

Last Christmas I bought some branches said to be laurel, but do not think they were true to name. Is there more than one kind?—E.W., Galt, Ont.

Under the name laurel are commonly included many broad-leaved evergreens, but the true laurel, or sweet bay tree, of the florists is *Laurus nobilis*. Laurel leaves are used in some countries for cookery and making confections, because of their aromatic flavor. For purposes of adornment, it has had, and still has, a prominent place. In America the kalmias are known as laurels, and their glossy leaves are much sought for at Christmas. Most of our laurel comes from Maryland and Virginia, but it also is found in the eastern provinces of Canada.

Camellia Not a House Plant

Is the camellia a good plant for growing in the house?—R. P., Sarnia, Ont.

The camellia is a plant that requires plenty of pure air and a moderate temperature; therefore, it is not recommended as a house plant.—Answered by Thos. Manton, Eglinton, Ont.

The Canadian Horticulturist

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THE CHRISTMAS SEASON

There is nothing that exercises a more charming spell over the imagination than the time-honored tales of Christmas in "ye olden time." They carry us back to a time when Christmas was not only a season of gift-making and family gatherings, but also a season of complete abandonment to mirth and good-fellowship; to an age when men enjoyed life roughly, but heartily and earnestly; when society lost itself in home-bred feelings and honest fireside delights; and to a time when all classes observed more strictly the religious and social rights of this, the grandest festival of all the year.

The traditional customs of the Christmas of long ago awaken within us most profound and heartfelt admiration for the manner and sentiment in which they were observed. Everything conspired to produce the kindest feelings of merriment and good cheer. The Yule Log, with its many superstitions, glowed and blazed to warm the hearts of the merry makers; the sound of minstrelsy and the singing of Christmas carols added their charm of melody to the occasion; and the profuse decorations of Christmas greens—the holly, the laurel and the mistletoe—contributed more than all else to make Christmas what it surely was then, and what it is today, in a somewhat modern sense, a merry Christmas.

Time and modern fashion have gradually worn away many of these ancient customs. The old genial spirit of hospitality has been supplanted, for better or worse, by the more enlightened and elegant tone of modern refinement. The beautifully simple, but earnest, melody of the old-time carol has been displaced by the more stirring effect of the modern anthem. The honest enjoyments of the past have given way to more trivial and fleeting pleasures. Truly we may say that the Christmas of to-day is far removed from the Christmas of long ago; yet, despite the havoc wrought by time, the season is now, as then, the most fondly cherished of all the year. In sentiment and charm Christmas remains the same, notwithstanding the work of Father Time in altering the customs of antiquity.

The very season of the year influences our appreciation of Christmas. At other times we may enjoy the beauties of living nature, but at this time, when all around is barren and bleak, or lying silently hidden beneath the snow, we are bound to appreciate the joyous season of good cheer. While the world without is stripped of its verdure, within the home nature may be reproduced in a wealth of Christmas greens. A cherished remembrance is the decorative effect produced by the use of evergreens in the house. "What deep breaths from the outside world come into our homes with these Christmas greens! They are resinous with the odor of great fir forests, where snowflakes are flying; spicy with orchid incense from tropical jungles, where palms and smilax flourish; vibrant, perhaps, with mocking-bird songs in swamps, where the mistletoe grows." With this issue, The Canadian Horticulturist greets its readers right heartily and wishes them well.

BELOW THE STANDARD

The need for improvement in the horticultural department at the Ontario Agricultural College has become so apparent that further silence, on our part, would be an injury to the horticultural interests of the province. It is out of touch with the rank and file of the fruit and vegetable growers, as well as with the professional florists. There are men under the direction of the professor of horticultnre who are capable of doing good work. They should be given an opportunity, for the department is not accomplishing the results that it should.

Last February we drew attention to the necessity for something being done that would place the horticultural department at Guelph on a better footing. Our remarks drew forth a reply in defence of the department. We were tempted to make answer, but did not do so, because we were given to nnderstand that the appropriation for the horticnltural department for this year had been increased, and that better things, therefore, might be expected. In the months that have intervened no signs of any marked improvement have been noticeable. Instead, the complaints against the management have increased in nnmber. In September, the florists who met in convention at Guelph appointed a committee to wait upon the government and urge that more work of value to florists be undertaken. More recently a committee of practical vegetable growers who visited the college has reported that but little is being accomplished that is of value to vegetable growers, and that some of the work that is in progress is being conducted in a manner that is not a credit to the institution. Fruit growers, as yet, have not taken any public action calling for improvement. We have long been aware, however, that a strong feeling is general among them that improvement in the department is needed.

In defence of the department, it has been stated: First, that the number of lectures given yearly has increased greatly without a proportionate increase in the staff; second, that in addition to teaching, the department has to furnish fruits and vegetables to the college boarding-houses and flowers for decorating purposes, as well as to maintain over forty acres of lawn and grounds in a condition to be above criticism; and third, that with all its other work it has not the time to undertake investigation work, nor the funds.

This defence reduces the matter to a question of men The professor of horticulture at Guelph should be a man of outstanding ability, able to see the horticultural needs of the province and to take steps to satisfy them. Work of minor importance such as the furnishing of vegetables and fruit for the college tables, and even a considerable proportion of the lecture work would be relegated, by such a man, to a capable foreman or foremen, and to an assistant professor. In this way he would leave himself free for the more important research work. Around him he would gather the various fruit, vegetable and other horticultural organizations of the province, and through and with them he would see that he was furnished with the funds needed by his department.

Canadians are proud of the Agricultural College at Guelph. It has professors on its staff who are a credit to the Dominion. Its graduates have risen to prominence both at home and abroad. It is because we desire to see the splendid reputation of the college maintained that we feel it our duty to draw attention to the absolute necessity for a decided improvement in the horticultural department.

HAS BECOME A NECESSITY

The Ontario Horticultural Exhibition has reached the point where it is looked upon as a necessity. Should anything occur to stop it or to mar its progress it would be a calamity. People have become accustomed to looking for it, not only that they may attend the conventions and hear the important discussions that take place, but, also, that they may profit from the valuable educational lessons that may be gained by a study of the splendid exhibits of fruit, flowers and vegetables. These exhibits, each year, illustrate the latest developments in all three of the allied industries. The improvement that has taken place during the past two years in the packing of fruit alone, as shown by each succeeding exhibit, justifies the expenditure by the Ontario Government of every cent it has given the exhibition. Fruit, vegetable and flower growers now appreciate the fact that the exhibition affords an opportunity to learn things. Were it to be stopped, the result would be an injury to the province.

The excursions on the railways at low rates benefit the members and friends of the organizations that assemble at the time of the exhibition. Were it not for the rates made possible by the exhibition the conventions would be poorly attended. It is gratifying to feel that the show has come to stay. Its complete financial success cannot be long delayed, as it is growing rapidly and assuming larger proportions each year.

Lovers of horticulture who wish to make progress must keep themselves informed on the methods and ideas of those who have made a success of the art. While practical experience in fruit growing and gardening is a great teacher, yet the perusal of a good class of literature on the various subjects pertaining to the work is necessary to broaden one's conception of things horticultural. It gives one a better idea of the viewpoint of people who have made this or that branch of horticnltnre a special study. That the desire to learn is prevalent among the readers of The Canadian Horticulturist is evident from the many requests for books on horticultural topics that reach this office. These requests have become so numerous, we have decided to extend our business by adding a book department to the paper. A catalog, with titles and descriptions of books written by well-known horticultural authorities, has been prepared. It will be mailed free to any person

who is interested and who makes application to THE CANADIAN HORTICULTURIST. We will be able, in future, to furnish our readers with any of the standard books on horticulture.

The Ontario Horticultural Association should not only help the various horticulturial societies of the province in their work, but should serve to protect and advance their interests in other ways. This association is the missing link that the societies have long needed. By its means they will be kept informed in regard to different lines of work that have succeeded with the various societies. It will serve, also, to more thoroughly advertise the good work that is being done by them and thus prepare the way for a larger government grant when the increase in the number of the societies warrants such action. The success of the association will depend upon the cooperation of the local societies. It will pay the latter well to do everything in their power to aid the provincial organization.

A number of fruit growers in Canada are using carbolic acid gas as a source of power for their spraying machines. Many more would do so were it not for the duty imposed on the containers in which the gas is imported from the United States. At the recent convention of the Ontario Fruit Growers' Association, a resolution was adopted asking the Dominion Government to admit the containers, subject to some system of registration, so that they may be admitted free, duty to be levied on the gas only. This is a matter of much importance to our fruit industry. It is to be hoped that the request of the growers will be given an early hearing, so that a new and satisfactory arrangement may be effected before the beginning of spraying operations during the coming winter.

While THE CANADIAN HORTICULTURIST is not in favor of the general introduction of the Spencer Seedless Apple into Canada until it has been tested at our experiment stations, it has not been our intention to say anything that would cast a reflection on the business integrity of the Canadian company that is offering the trees for sale. We have no reason to believe that the company is other than honorable and commercially sound. In fact, at its head are some of the leading business men of Toronto. Our remarks in recent issues have been directed at the apple, not at the company. We wish this to be understood. Further comments, in this issue, on the apple are unnecessary. The Ontario Fruit Growers' Association has dealt with it and found it wanting.

It was with regret that we heard of the death of Mrs. Juliet McNeill on November 18. She was the wife of Mr. A. McNeill, Chief of the Fruit Division, Ottawa. Mrs. McNeill had not been well for several months, but only during the three weeks previous to her decease did her illness assume a serious character. THE CANADIAN HORTICULTURIST and fruit growers all over the Dominion condole with Mr. McNeill in his sorrow. Only a few months have passed since he lost a son.

Farmers' Institute speakers assembled at the O.A.C., on Nov. 20-23, for special instruction in the various branches of their work. Among the fruit men who delivered lectures were Robt. Thompson, St. Catharines; D. Johnson, Forest; J. E. Orr, Fruitland; A. E. Sherrington, Walkerton, and Prof. H. L. Hutt, of the O.A.C.

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The Ontario Horticultural Association

ENTHUSIASM marked the convention of the delegates from the various horticultural societies of the province, which met in Toronto, Nov. 9, at the time of the Ont. Horticultural Exhibition. About one-third of the societies in the province were represented. The main features of the convention were the final adoption of a constitution perpared by a committtee appointed at the last convention, a discussion of the new Act governing horticultural societies, and the election of officers.

In his annual address, the pres., Mr. W. B. Burgoyne, of St. Catharines, reported that the govt. had agreed to give the assn. an annual grant of $100 to help defray the expenses connected with the bringing of speakers to the convention. This will do much to place the assn. on a sound basis. The govt. had consented also to secure a shorthand report of the proceedings

Pres. W. B. Burgoyne

of each convention and to publish these as a govt. report and to send copies to the officers of the various hort'l societies throughout the province. This means that the societies all through the province will be benefited by the discussions that take place at the annual conventions.

The constitution adopted explains that the objects of the assn. are to assist the various hort'l societies of Ont. The fee for membership of each society was placed at $2 a year. Eleven societies joined at the convention, and the delegates from other societies promised to send their fees as soon as possible. Every society in the province will have a right to send delegates to the convention, but only those societies who join the assn. can vote through their delegates.

A lengthy discussion took place over the new Act governing hort'l societies. The discussion was led by H. B. Cowan, supt. of hort'l societies, who explained the disadvantages under which the societies had worked in the past and the objects of the various provisions of the new Act. Several clauses in the Act were discussed at considerable length, but no important amendments were suggested. The unanimous opinion of those present was that the societies throughout Ont will be greatly benefited by the new Act, and that a great increase taken in the work of hort'l societies may be expected.

In the afternoon two interesting discussions were held. The first related to the holding of garden competitions by hort'l societies and was led by Mr. S. Short, of Ottawa, who described the benefit that has followed from the Lady Minto and Lady Grey competitions in that city. Work of a similar kind conducted in Hamilton was described by Messrs. J. O. McCulloch and A. Alexander of that city. The second discussion referred to the giving of seeds to school children and the holding of exhibitions of flowers grown by the children. It was led by Mr. J. Thos. Murphy, of the Simcoe society, and by Mr. Walter Brooks, of the Brantford society. Reports of these discussions will be given in THE HORTICULTURIST later. They were taken part in by a number of the delegates.

The election of officers resulted as follows: Pres., W. B. Burgoyne, of St. Catharines; 1st vice-pres., Maj. H. J. Snelgrove, of Cobourg; 2nd vice-pres., R. B. Whyte, of Ottawa; directors, Messrs. Rev. Mr. Scott, of Perth; H. Jeffers Diamond, of Belleville; H. R. Frankland, of Toronto.

Among the resolutions passed was one expressing pleasure over the great improvements that had been made in THE CANADIAN HORTICULTURIST. The feeling of the meeting was that THE HORTICULTURIST is doing much to promote the interest of the hort'l societies of the province and that the societies should support it in every way possible.

The Need for Cold Storage

R. J. Cochrane, Colborne, Ont.

The question of cold storage for fruit is an important one. The need for cold storage buildings at various points in Canada is plainly evident. If such were located in every apple section of the country, it would make it possible to hold the fruit and sell when the market is most favorable.

Cold storage supplants spraying in that, if a small percentage of fungi escape the spray-motor, or if a small percentage of codling moth enclosed in the apple in the springtime succeeds in finding its way into the barrel, a low temperature prevents development. Cold storage assists the packer in conforming to the Fruit Marks Act, in that when apples are properly packed and cooled they do not ripen or decay. The apples retain that rough, bright, lustreful appearance that fills the eye, the snappy texture and quality that satisfies the palate, and that brings money to the pocket of the producer. They will not be wet, slack or wasty. Cold storage is of still vastly more importance in the marketing of apples. Our harvest apples, fall apples and winter apples are hurled onto the market almost simultaneously, the harvest apples overripe, the fall varieties and winter varieties not ripe enough, and many in bad condition. With cold storage within a wagon haul of the farmer he can pick each variety and place it in cold storage when it is properly ripened and properly colored. With local cold storage each variety goes onto the marbet in its proper season and in good condition, and the market will last the year round. The fruit business will be as safe and reliable to the producers as is the cheese business to-day. The consumer will have apples the year round that will be a credit to the Dominion of Canada.

A movement is on foot whereby these advantages may be secured to the Canadian farmer. The government can assist the farmers and place cold storage within their reach. Before this will be done, the people must show some interest in the proposal. They must realize the enormous loss and waste that is taking place annually in the fruit industry. Every newspaper should give this matter close attention, so that the fruit growers may feel that they have the press behind them.

The Horticulturist for 1907

THIS being the season when our readers and others are making up their reading lists for next year, we are going to take a little space in which to tell you of the many new features we are planning for THE CANADIAN HORTICULTURIST. During 1907 every department of THE CANADIAN HORTICULTURIST will be vastly improved. The 12 issues of the paper will far surpass any we have ever printed. Already a splendid list of special features have been secured that will be of unusual value to Canadians, and that will make the paper of great interest to fruit and vegetable growers, and to amateur flower growers, including members of horticultural societies.

A number of the best known horticultural authorities in Canada, both professional and amateur, have agreed to contribute articles, and series of articles, each of which will be worth to those interested our full price of subscription. The following are some of the good things we are preparing for our readers:

In our fruit department during the winter months will appear articles on "Pruning Tree and Bush Fruits," "Spraying for Scale and Other Orchard Pests," "The Selection of Varieties Best Suited to the Various Provinces," "The Care of the Vineyard," "The Markets of the West," and others of equal value. Next spring and summer some of the fruit articles that you may look for will be entitled: "Does it Pay to Thin Orchard Fruits," "The Principles and the Practice of Orchard Cultivation," "The Profits of Fruit Growing," "The Culture of the Apple," "Plums and How to Grow Them," "Marketing the Stone Fruits," "Picking, Packing and Selling Apples," and many timely articles on cultural directions. Besides these, accurate crop reports from all sections of Ontario and from the various provinces will be a leading feature of THE HORTICULTURIST for 1907.

GARDEN DEPARTMENT

Our Lawn, Garden and Flower Department will be replete with valuable information for the amateur gardener. Each month will be published a page or two of seasonable reminders —50 pointers or more in one article. This feature alone is worth the price of subscription. There will be seen also articles on "The Care and Management of Lawns," "The Culture of Hardy Shrubs," "Landscape Gardening for Amateurs," "The Best Perennials and How to Grow Them," "A Garden of Old-Fashioned Flowers," "All the Wild Flowers Worth Growing," "Flowers for the Million and for the Millionaire," "Native Ferns and their Culture in the Home Garden," "City Garden Troubles and What To Do," "Grow Vegetables at Home and Save Money," "Hardy Annuals for the Suburban Garden," "Fruit Trees Worth Growing on the Lawn," "The Real Thing in Home Decoration," "The Window Garden," "All the Tulips Worth Growing Inside and Out," "How to Have a Succession of Fruits in the City Garden," "How to Grow Many Plants from a Few," and a score of other topics that will please.

FOR VEGETABLE GROWERS

The vegetable gardener will find special pages for him. Some of the subjects to be dealt with are: "Forcing Lettuce and Radish under Glass," "A Simple Experiment with Fertilizers: It Teaches Something," "Growing Greenhouse Tomatoes," "Onion Growing," "The Culture of Celery for Profit," "Melons and Melon Growing," "All the Garden Greens Worth Growing," "Growing Tomatoes for the Canning Factory," "Asparagus for Market," and numerous others. Each month, also, accurate and complete reports of vegetable crop conditions in Ontario and elsewhere in Canada will appear in our columns. Do not miss the opportunity to get such information.

OUR SUBSCRIPTION OFFERS

As our aim is to make THE CANADIAN HORTICULTURIST of special value to Canadians, and as we desire to make the paper a publication of which every Canadian can be proud, we hope to receive the support of every Canadian interested in fruit, vegetables or flowers. Not only should our readers renew their subscriptions, but they should introduce the paper to their friends. Here is our schedule of subscription rates. One full year's subscription, 50 cents; One new or renewal subscription for three years, $1.20; Three new full year subscriptions, $1.00; Two new and one renewal subscription for one year, $1.00; or, send us two new full year subscriptions at 50 cents each and we will renew your subscription for a year free. A liberal commission is offered for new subscriptions at 50 cents each.

Will not our readers help us, not only by renewing their subscriptions, but also by getting us new subscribers? We desire your help and will give you good value for your money.

The Ontario Vegetable Growers' Convention

THE second annual convention of the Ontario Vegetable Growers' Association was held in the City Hall, Toronto, Nov. 8-9. President F. F. Reeves, Humber Bay, occupied the chair in a dignified and business manner.

The meetings were well attended, and the papers and addresses received the greatest attention, and drew out considerable discussion, showing that the association is a live one, almost every member present taking part in the discussion. The address by Prof. R. Harcourt, O.A.C., Guelph, on "Fertilizers in Relation to Vegetable Growing," was so well appreciated, that a standing vote of thanks was tendered him.

Thursday morning's session was devoted to an address by the president, who congratulated the members on the growth of the association, and stated that the future looked very bright. Already there were branch associaitons at Toronto, St. Catharines, Brantford, Tecumseh, Kingston, Chatham, Sarnia and Ottawa. Mr. Geo. A. Robertson, of St. Catharines, followed with an interesting paper on "Experiments with Tomatoes." He advocated careful selection of seed from year to year to increase the yield. Nitrogen would increase the crop, but at the expense of earliness. Mr. C. Gibbard, of Todmorden, followed with a paper on "Growing Tomatoes Under Glass." To make this profitable, he said that glass houses must be used for other purposes as well, such as lettuce, radishes, and so on. Tomatoes require careful and strict attention. Mr. Eugene Davis, of Grand Rapids, Michigan, was not present to read his paper on "Lettuce Forcing and Bean Growing." It was a very pithy paper, and full of practical points.

At the afternoon session Professor Harcourt gave his address on "Fertilizers." He advocated the use of barnyard manure, aided by different chemical fertilizers for different crops. Potash and phosphoric acid for fruit, and nitrogen for leafy growth. Lime would check the acidity of some soils, which is due to the acid-forming tendency of decaying vegetable matter. The reading of the prize essays occupied the rest of the afternoon.

At Friday morning's session, Mr. E. E. Adams of Leamington gave a paper on "Forcing Early Vegetables," *i.e.*, starting them under glass and transplanting to the open field. Mr. Adams makes this pay, and his paper demonstrated how to do it. "Onion Growing" was ably illustrated in the paper read by Mr. E. G. Malcolm, of Scotland, Ont., a most successful onion grower. Mr. T. Benstead, of Strathroy, told the association how he grows prize celery, and Mr. McInnes, of London, gave an address on "Storing Celery for Winter Use." This was followed by a paper on "Melon Growing" by W. G. Horne, of Clarkson, Ont. Mr. Horne advocates planting the seed in pieces of sod under glass. The meeting was closed by a short talk on other vegetables by Mr. A. McMeans, O.A.C., Guelph.

Among those who took a prominent part in the various discussions were W. W. Armstrong, Queenston; Robert Busbell, Kingston; A. McInnes, London; Geo. Syme, Jr., Carlton West; James Gibbard, Sr., Todmorden; Professor Macoun, Ottawa; Thos. Delworth, Weston; Robert Thompson and Geo. A. Robertson, St. Catharines; E. Purdy, Kingston; F. Shuter, Jos. Rush, Humber Bay; and George Nicholson, Orangeville.

Christmas Gifts for All

Have you some friend you would like to remember this Christmas by a practical but inexpensive gift? Something that would be of practical value to him, and that would keep. We have a splendid list of books which could be given as Christmas gifts to all your friends. Here are a few of them:

FOR THE FRUIT GROWER

"Fruit Harvesting, Storing, Marketing, etc.," F. A. Waugh, $1.00. "The Grape Culturist," A. S. Fuller, $1.50. "The Grape Grower's Guide," William Chorlton, 75 cents. "Peach Culture," James A. Fulton, $1.00. "Practical Fruit Grower," S. T. Maynard, 50 cents.

FLOWERS AND ORNAMENTAL PLANTS

"The Beautiful Flower Garden," F. Schuyler Mathews, 40 cents. "The Chrysanthemum," Arthur Herrington, 50 cents. "Garden Making," L. H. Bailey, $1.00. "Home Floriculture," E. E. Rexford, $1.00. "Pictorial Practical Gardening," Walter P. Wright, 75 cents. "The Window Flower Garden," Julius Heinrich, 50 cents. "Your Plants," James Sheehan, 40 cents.

MARKET GARDENING

"Asparagus," F. H. Hexamer, 50 cents. "Cabbage, Cauliflower and Allied Vegetables," C. L. Allen, 50 cents. "Gardening for Profits," Peter Henderson, $1.50. "Market Gardening and Farm Notes," Burnet Landreth, $1.00. "Vegetables Under Glass," Henry A. Dreer, 25 cents.

OUR SPECIAL OFFER

We will give any of the above books to any of our subscribers who will send us one new subscription for each fifty cents on the price of the book. For example: "Garden Making," by L. H. Bailey, is sold for $1.00 a copy. We will give a copy of the book free for two *new* subscriptions. If the price of the book were $1.50, as in the case of "Gardening for Profits," by Peter Henderson, then we would send it free on receipt of *three new* subscriptions. For each 50 cents, or fraction thereof, in the value of the book, send one *new* subscription.

This is a good way in which to secure a library on any horticultural subject. Besides the books we have named above, we have a large number of others. Our catalog will be mailed free to all who are interested.

The Missouri State Hort'l Soc. will hold its annual meeting on Dec. 4, 5, 6 at Boonville, Mo.

Ontario Fruit Growers in Convention

A COMPLAINT of fruit growers respecting the purchasing of nursery trees that have not proved true to name brought about the adoption of an important resolution at the recent convention of the Ontario Fruit Growers' Assn., held in Toronto on Nov. 7 and 8. Mr. George A. Robertson, of St. Catharines, brought the matter up and a considerable discussion resulted. A committee appointed to report on the matter did so as follows:

1. That it is a fact that considerable of the nursery stock planted in years past has been of inferior quality and untrue in name, and as a result the growers who planted such stock have suffered in many cases severe financial loss as well as great inconvenience.

2. That a considerable quantity of the stock which has proved untrue to name has been purchased from irresponsible agents and unreliable firms, but that the self-styled reliable nurserymen are not all exempt from this practice.

3. That much of the blame and dissatisfaction caused has been shouldered on the nurserymen situated in the United States, but that geographical situation is not wholly accountable for this, as there are reliable as well as unreliable nurserymen in the U.S. as well as in Canada.

4. That trees be produced true to name and sold to those growers who desire such trees under a written guarantee, and that this guarantee mean that the nurserymen be held responsible if the trees are not up to the guaranteed standard.

5. That the nurserymen may supply to those who desire them trees which, on account of their cheapness or first cost, will satisfy the demands of intending purchasers, but that for the quality of which, as now, the nurserymen will not be held responsible.

6. That in case of a dispute between any grower and nurseryman, if action be taken, the matter be settled in the court nearest the home of the fruit grower so wronged.

7. That the matter of propagation of nursery stock from the proper root stock, budded or grafted with buds or scions from healthy trees of good bearing quality, of the true type of the true variety, be left at present in abeyance, and that this association procure a competent speaker from the U.S. or elsewhere, to give an illustrated lecture on this subject at our next annual convention, and use every effort in the endeavor to inform the fruit growers of the advisability of such a method of propagation which will in time create a demand which the up-to-date nurseryman will supply.

IMPORTANT RESOLUTIONS

At the convention a number of other resolutions, more or less important, were adopted. Among them the following:

We desire to place on record an expression of our warm approval of the action of the Dominion Government, in having, in response to the request of this and other organizations, procured the passing of legislation placing the control of express rates in the hands of the

We trust that the action of Parliament in giving a legal definition to No. 2 grade of apples will have the effect of giving to the produce of Canadian orchards a still better standing in the markets of the world.

We desire to express our thanks to the Hon. Sydney Fisher in calling a Dominion conference of fruit growers last March, a conference which resulted in harmonizing many little antagonisms between the provinces, in bringing fruit growers from all parts of the Dominion together for united action, and in giving a still further impetus to what has become a great national industry.

We believe that the thanks of every commercial fruit grower in Ont. are due to Alexander McNeill, Chief, Ottawa Fruit Division, for the remarkably full and correct reports issued by him during the present growing season in regard to fruit conditions and prospects—reports that place growers, in a measure, on a footing of equality with buyers in regard to factors governing market conditions.

We would, however, strongly recommend that fuller information than now be given in regard to crop conditions and market prospects in other countries, and that to this end the Dept. of Agr. at Ottawa be asked to secure the cooperation of the Dept. of Trade and Commerce in securing the reports from Canadian commercial agents in Great Britain, Australia and South Africa in regard to probable production before crop maturity, also that the cooperation of the hort. assns. in the U.S. be secured, and an exchange of timely information with these be arranged for. We do this because even the fullest reports as to Canadian conditions are of comparatively small value unless we have information from other countries approaching that of our own in regard to fulness.

We would strongly urge that the Dept. of Agri. for Ont., in addition to what is now being done, and in addition to what also has been asked in the resolution adopted on the motion of Mr. Peart, arrange for obtaining special reports after fruit has set, from the most reliable growers from the sections in which fruit is largely grown.

We strongly approve of the main point in the Robertson resolution, namely, that legislation be asked for which will provide that nurserymen shall guarantee their stock as true to name, and that where the promise is not fulfilled, an adequate penalty be imposed.

We regret that aside from the action taken at Ottawa, resulting in placing of express rates under the control of the Railway Commission, comparatively little has been done in regard to transportation during the present year. We most strongly urge that action be taken by the Transportation Committee during the coming year, looking to a material reduction in freight rates on apples, and a sweeping cutting down in express rates.

We are delighted to note the extension of the cooperative movement among fruit growers in the province, and regret that comparatively little has been done to aid in the extension of this movement by this association, and strongly urge that an officer be appointed whose duty it shall be to give his whole time to the encouragement of organizations now formed, and to the creating of new ones.

We desire to place on record our warm appreciation of the invaluable services rendered by the directors of this association, many of whom have served long terms in office, frequently at serious inconvenience to themselves. We recognize also the splendid spirit shown by these same directors, now that a new stage of development is called for, in so frankly joining in the movement to make the organization more representative than it is at the present time.

That this association would urge the Minister of Trade and Commerce for the Dominion to amend the Act respecting staple commodities (that re fruit baskets), in accordance with the resolution passed by the fruit associations, and that the government make, and stamp the forms and issue them to the basket manufacturers to ensure uniformity of fruit packages.

That inasmuch as a large number of fruit growers are using carbonic acid gas as a source of power in their spraying operations, and as a great deal of difficulty has been experienced in securing a satisfactory supply in Canada, we would respecfully urge upon the Dominion Government the desirability of some system of registration of the containers, so that these containers might pass freely to and from the U.S., duty being levied upon the gas only. By this means a satisfactory supply might be available, and spraying operations greatly facilitated.

That the Government of Ont. be asked to publish yearly in the report of the Bureau of Industries further details regarding the fruit industry of the province, that the government be asked to add columns on the assessment roll providing for the gathering of information regarding fruit statistics.

That we desire to show our unbounded gratification at the splendid public spirit shown by Mr. M. F. Rittenhouse of Chicago, in giving a farm for experimental work in tender fruits, and in the prompt action of the Ontario Department of Agriculture in providing equipment for the same.

THE SPENCER SEEDLESS APPLE

The Spencer Seedless Apple was the subject for considerable discussion. Its dissemination in Canada means something of more than ordinary importance to our fruit industry. If it were what it is claimed to be, it would supplant all the standard varieties now grown. Fruit growers think it is not. A committee consisting of H. H. Groff, Simcoe, chairman; D. Johnston, Forest; E. Morris, Fonthill; W. H. Dempsey, Trenton; and W. T. Macoun, Ottawa, was appointed to look into its merits and demerits. They reported as follows:

"We secured specimens from the exhibit at Massey Hall, which showed the following objectionable characteristics in apparent contradiction to the printed description. Although the core is smaller and less distinct than in the average apple, there is still sufficient to make the process of coring a necessity. The practical absence of the calyx tube leaves an abnormally large and deep opening reaching to the core, thereby involving loss of flesh nearly equal to a normal core, as well as affording a harbor for injurious insect pests. The specimens examined by us showed this space to contain an objectionable mold-like accumulation. They also gave well-developed seeds, though fewer than the normal apple. As to size, the specimens seen by us were about equal to our Fameuse, or Snow, and those tested for quality and flavor were about equal to Ben Davis. We believe that our inspection warrants the advice that trees of this apple should only be purchased as a curiosity."

In the course of one of the sessions, a representative of The Spencer Seedless Apple Co., of Toronto, addressed the convention. He protested against the report of the committee and intimated that such was biased. He claimed that the fruit in flavor was similar to that of the Baldwin, that apples from the latest generation of trees do not show any more opening at the calyx than an ordinary apple, that the core found by the committee vanishes as the apple becomes more mature, and that the apple is well worth planting in Canada. In the face of the aforementioned report and of the general disfavor in which fruit growers look upon the apple, these explanations, while presented to the meeting in a kindly way, are not acceptable to practical men—men who know what is what in a variety of apple for commercial purposes.

REVISION OF CONSTITUTION

One of the most important items of business transacted was a revision of the constitution. As was pointed out in the Sept. number of THE CANADIAN HORTICULTURIST, the time seemed ripe for a change. It has been felt that the

assn. has been managed somewhat as a "close corporation." This feeling has been general, not only among the members of the assn., but also among the larger body of fruit growers in the province. In another column we publish in full the clauses that have been amended. The following 13 directors for the various divisions, as numbered, were elected by ballot: 1, A. D. Harkness, Irena; 2, A. A. Wright, M.P., Renfrew; 3, Harold Jones, Maitland; 4. W. H. Dempsey, Trenton; 5, W. Rickard, Newcastle; 6, Elmer Lick, Oshawa; 7, A. W. Peart, Burlington; 8, Geo. A. Robertson, St. Catharines; 9. H. H. Groff, Simcoe; 10, A. E. Sherrington, Walkerton; 11, A. O. Telfer, Ilderton; 12, D. Johnston, Forest; 13, C. L. Stephens, Orillia.

According to the new arrangements, the assn. in future will finish its financial year on Dec. 31. An extra business meeting will be held each year in Jan., when the newly-elected board of directors will take office and appoint from among themselves a pres. and vice-pres., and from among themselves, or otherwise, a sec.-treas.

THE DOMINION CONFERENCE

The immediate results and the possibilities of the Dominion Conference of fruit growers were discussed respectively by W. H. Bunting, St. Catharines, and A. W. Peart, Burlington. In the course of Mr. Bunting's remarks he graciously referred to the work of Mr. Alex. McNeill in bringing about the conference. By his efforts in this direction, Mr. McNeill has brought about a feeling of harmony between fruit growers in the various provinces. Among the results of the conference, Mr. Bunting mentioned that the discussion there on fruit statistics, while excellently presented by Mr. Peart, went to show the need of more accurate data in that respect. The establishment of a definition for No. 2 apples, and of a new grade "Fancy," were important changes in the Fruit Marks Act. The feeling of the conference regarding pure food products has been the means of doing good. The discussion on fruit packages and the proposals made have gone a long way towards bringing about uniformity. The express companies operating in Canada have been placed under control of the Railway Commission.

When discussing the value and possibilities of the Dominion fruit conference, Mr. Peart also said that it tended to break down provincial prejudice and to make the fruit men more united. Many important matters were discussed, among them the question of transportation in various phases, such as, putting the express companies under the Railway Commission, railway facilities, ocean transportation, and cold storage for tender products. Mr. Peart referred also to markets and marketing and to insect and fungous pests, as discussed at the conference.

When speaking of Dominion fruit statistics, Mr. Peart said: "The value of our fruits and vegetables are lumped at $12,994,900 for 1901. In acreage all orchards are lumped together. Vegetables and small fruits are lumped also. Vineyards are separate. The Ont. statistics gives information on fruit as follows: (1) Acreage of orchards and gardens lumped by counties and province; (2) acreage of vineyards by counties and province; (3) number of apple trees 15 years old and over, number under 15 years, and bushels per tree by counties and province. I would suggest that Ont. be asked to give further fruit details as follows: Acres of apple, pear, plum, and peach orchards; acres of other tree fruits, of small fruits and of vineyard, all by counties and province; also, acres of garden truck, such as tomatoes and so on, by counties and province. It would be well, also, to continue to give the number of apple trees by counties and province, and the average yield per tree by counties and province."

FRUIT STATISTICS

The question of fruit statistics was discussed, also, by Mr. C. C. James, Ont. Dep. Min. of Agr. He spoke of the difficulty and cost of compiling accurate and extensive statistics. The dept. finds it hard to secure reliable estimates of the crop yield. The yield per acre of farm crops can readily be estimated, but it is a different matter in the case of fruits. So many influences come to bear on the crop between the time of blossoming and the harvest, that it is practically impossible to state at any one time what the crop will be when matured.

In Ontario there are about 7,000,000 apple trees in bearing according to the census of 1901. When one estimates the probable yield of these trees in a normal season, and then notices the number of barrels that are actually marketed, it is surprising to contemplate the tremendous waste and loss to the farmers in this country that occurs. An interesting discussion followed Mr. James' remarks.

It was suggested that crop statistics could be secured by the assessors. Others thought that the information could be secured from school teachers and pupils. Professor Parrot, of the Geneva Exp. Sta., said that crop estimates and values made before maturity are only approximate at the best. A knowledge of the crop outlook in one province or state is of little value without similar information regarding the conditions in others. The opinion was general that even accurate information regarding crop conditions in Ontario and in Canada is of small value unless a knowledge of the crops in the U.S. and in Europe is also known.

REPORT ON NEW FRUITS

In a report on new fruits, Mr. W. T. Macoun said: "There were fewer good, new fruits brought to our notice this year than usual, but some interesting and promising seedlings have fruited at the Cen. Exp. Farm, most of them for the first time. The cry from the colder parts of the province of Ont. for a winter apple with high quality and fine appearance may still go on unsatisfied, but we believe that it will not now be long before we shall have an apple which will fill this long felt want. The extremely severe winter of 1903-4 killed out many varieties of apples at Ottawa, but the lessons learned from that winter have been of the utmost value, and should save many thousands of dollars to those who are planting apple trees in those parts of the country where the climate is similar to what it is at Ottawa.

"One of the facts that was brought especially to our notice after that winter was that it was the trees of the varieties which ripened their wood early which came through in the best condition. An early ripening tree means, in our experience, a tree which ripens its fruit early, hence most of the hardy varieties prove to be summer and fall sorts, but there are exceptions, and we found that in some cases the trees mature early and the fruit is in condition for eating in late fall or early winter, yet the fruit will keep practically all winter. In other words, the texture of some apples does not break down as soon as others, even though they become fit to eat at the same time. It is this early maturing but long-keeping apple which will give us the tree hardy enough to withstand a test winter. Some varieties of this character which withstood the test winter at Ottawa are Winter Rose, Stone, Calumet, Scott's Winter, Milwaukee, La Victoire, and Baxter. The Winter Rose is an apple of good size, of fair appearance and good quality, but has not sufficient acidity for a winter apple. The Stone is of much the same character. The Calumet is an attractive looking apple, but not even enough in size nor quite good enough in quality. The La Victoire comes nearest being an apple of the desired type, but lacks juiciness. The Baxter is a very large, handsome apple, but somewhat coarse. Since the winter of 1904, however, when it proved so hardy, we consider it a desirable apple for planting in the North

"As was stated last year, we have at Ottawa a collection of very promising seedlings which have been sent in by persons who have originated them. As these are being tested as standard trees rather than top grafts, they are longer coming into bearing, but our own seedlings, raised from the best apples fruited at Ottawa, are not fruiting in considerable numbers. Out of 84 which we have described, consisting of seedlings of Fameuse, McIntosh, Swazie, Wealthy, Scott's Winter, Winter St. Lawrence, and Dorkham Russett, 21 have been considered sufficiently promising to propagate for further trial, so that if this proportion, which is 25% of promising apples, is maintained through the 2,000 apple seedlings which are being grown, we should have about 500 promising varieties to select from.

"A number of promising crosses have fruited, and many Russian seedlings also. There is a temptation to disseminate some of the best of these, but we believe that even though it takes a long time it is best to thoroughly test a variety before recommending it, as there are too many kinds on the market already. It is interesting to note among the seedlings which have fruited, the more or less resemblance in most cases to the female parent and to the probable male or the tree growing near that from which the fruit was taken in the orchard. This is particularly the case in regard to the seedlings of Wealthy and Swazie Pomme Grise. Near the original tree of Swazie seedlings and the large dots on the skin show the Baxter blood, and in one instance a large Swazie seedling looked very much like Baxter in outward appearance. The Wealthy seedlings nearly all have that smooth, symmetrical surface peculiar to the parent, and in some instances the seedlings have been quite crab-like, showing the crab origin of the Wealthy as claimed by Peter Gideon, the originator.

"Some good grape seedlings fruited this year, the seedlings of Brighton being particularly promising. One of these, a black seedling, almost identical with Brighton in flavor, but a finer grape, will, we believe, be an acquisition.

"There are 2 new apples which have been fruiting at Ottawa for several years which we would like to draw your attention to. These are the Walter and the Hoadly. They are both about the season of the Wealthy, but have proved very hardy and have merits of their own.

"WALTER.—Originated by the late P. C. Dempsey. Fruit, roundish, rather irregular, very large; cavity, deep, open, medium width; stem, short, moderately stout; basin, deep, medium to open, almost smooth to moderately wrinkled; color, greenish yellow, splashed and streaked with red, with dots, few, small, white, distinct; skin, moderately thick, moderately tender; core, small; flesh, yellow, rather coarse, juicy, melting, sub-acid; flavor, pleasant, high; quality, good; season, October.

"HOADLY.—Originated in Wisconsin. Fruit, oblate; size, above medium; cavity, deep, moderately open, slightly russeted; stem, short, slender; basin, medium depth and width, almost smooth to slightly wrinkled; calyx, open; color, yellow, splashed and streaked with carmine, with dots, few, yellow, indistinct; core, medium; quality, above medium; season, Oct. Tree, an upright grower, hardy and productive. Sections obtained from the late J. L. Budd, Ames, Iowa."

In the report by Prof. H. L. Hutt, O.A.C., which was a verbal one, he mentioned the work that is being done at the college in developing new varieties by plant breeding. They had 125 varieties of strawberries and 100 varieties of raspberries fruiting this year, many of which appear to be quite promising. They do not intend to give any of them names or disseminate them for cultivation until they have been given a more thorough trial, as they do not wish to send out any new varieties until they are satisfied, after thorough trial, that they are in some way superior to those already in general cultivation.

Among the promising new fruits which are not much grown in this country, Prof. Hutt referred to Cox's Orange Pippin, one of the most popular apples in the Old Country, because of its excellent quality. Where it has been fruiting here, it has borne heavily, but the fruit is apparently subject to rot, and probably would not prove valuable for shipping. It is, however,

worthy of trial in southern sections of the province as a choice dessert apple. Another variety mentioned was Minkler, originated a number of years ago in Ill. This is apparently a very productive variety, of medium size, and good quality, and is a long keeper. On account of its lateness in taking on color in the fall and its dull red color when matured, it probably would not compete in the market with higher colored varieties.

Reference was also made to the Spencer Seedless Apple and the statement made that in our province, where we have so many fruit expt. stas. to thoroughly test such new varieties before they are offered to the public, it would be folly for growers to invest in new varieties of this kind until they have been tested and reported upon.

THE COOPERATIVE MOVEMENT

Representatives from the various cooperative fruit growers' assns. in the province, reported on the progress that is being made in the movement. The character of the reports gave evidence of the value of cooperation. Arkona reported that the assn. started 2 years ago with 8 members and shipped 1 carload. This year, they shipped 1,400 bbls., and realized satisfactory returns. The members of the assn. are well pleased with their success. The Burlington assn. has had good success, and has done good work for its members. Belleville, a new assn., is well pleased with the progress that has been made during its first season.

The assn. at Forest has been in existence for 3 years and has a membership of 30. Much progress has been made in the growing, packing and marketing of fruits. A change in orchard methods through cooperating has made it possible for the members to produce in quantity, fruit of superior quality. Forest has received satisfactory returns for fruit this year. They have consigned principally to the Old Country. The Ilderton F. G. A. reported by letter and stated its satisfaction with the cooperative movement.

The assn. at Newcastle has had a successful season. The fruit was sold to a dealer who was erecting a cold storage warehouse. It averaged $2.25 a bbl. By cooperation, the orchards of the members have been well cared for, the quality of the fruit has been improved. It is proposed to increase the membership and probably to form a joint-stock company. A storehouse will be built in which the assn. intends to place its apples if a satisfactory price cannot be secured early in the season.

The Oshawa assn. reported that its first object is to secure a reasonable price to the grower for his fruit. During the past season, a good example of the value of cooperation was furnished. Some orchards of the members netted $1.30 to $1.70 a bbl., while neighboring orchards not in the assn. sold for 50 cts. a bbl. Oshawa has received returns from 800 or 900 bbls. The sales have been satisfactory. The consignments have brought practically the price asked for sales. The cooperative movement is not without its troubles. A few growers picked their fruit before it was ready. Another difficulty is the persistent efforts of apple operators to buy from members of the assn. with a view to breaking up the organization.

During the past season, the assn. at St. Catharines shipped about 160 cars, of which 60 were sold f. o. b., and netted a little over $30,000. Many of the cars were sold to commission men in the west. Members of the assn. cooperate in purchasing baskets, spraying materials and other supplies. They bought one car of fruit packages from B.C.

The Simcoe assn. comprises about 20 members and has done excellent work. They refused admittance to growers who would not agree to spray 4 times during the season. The result has been a marked improvement in the orchards and fruit of that vicinity. Some men who refused to comply with the requirements are now sorry. Fruit of the assn. has brought good prices. They intend building a storehouse and evaporator.

Many members of the Trenton assn. are now getting as much for their early fruit as they used to realize on their whole crop. One man who formerly got no more than $20 for his orchard, received $50 for it since he joined the assn. Another grower who had never realized more than $50 for his orchard, received $70 this year for his early fruit and still has 100 bbls. in storage. The assn. assigned one lot of fruit that netted $2.55 a bbl. Most of their winter fruit is in storage.

The secretary of the Ont. Cooperative F. G. A. referred to its recent organization. Cooperation among the cooperative assns. is a movement in the right direction. Through the central organization, the various local assns. are kept continually in touch with each other. They are given information each week regarding what the others are doing. From the central office, reports on crop conditions and prices are disseminated. As the provincial assn. is comparatively new, it has not attempted anything radical in the way of improving the conditions of the affiliated assns. It has been moving slowly, with a view to looking into the possibilities. Next year, through the provincial organization, it is possible for the local assns. to have a man placed in the West and another in England, to look after their interests.

MISCELLANEOUS ADDRESSES

Many interesting addresses were delivered, full reports of which will be published in the next issue of THE CANADIAN HORTICULTURIST. Among them were "Low-headed Peach Orchards," by Chas. F. Hale, Shelby, Mich.; "The San Jose Scale," by Prof. P. J. Parrot, Geneva exp. sta.; "Future of the Apple in Ontario," A. McNeill, Chief, Fruit Div., Ottawa; "Markets of the North-West," Robert Thompson, St. Catharines; "Protecting Trees from Mice and Rabbits," W. T. Macoun, Ottawa; and "The Strawberry," W. F. W. Fisher, Burlington.

The Min. of Agr. for Ont., Hon. Nelson Monteith, addressed the convention and spoke of the apparent decadence of the apple industry in various sections of the province, due largely to lack of care and attention. He said that the O. F. G. A. should do a little missionary work in the way of teaching the owners of such orchards how to improve them. Fruit growing makes farm life more attractive and should be encouraged. Its influence tends to keep the boys and girls on the farm. Ont. should be the banner province in fruit growing. The maintenance of her reputation depends upon cooperation. The minister pointed out the fact that quality counts for more to-day than ever it did in the past. The moral is, produce the best.

At the evening meeting, Nov. 7, Prof. H. L. Hutt, of the O.A.C., Guelph, took the audience on an imaginary trip throughout the length and breadth of the province to the homes of many prominent fruit growers. By means of limelight views and appropriate remarks, the Prof showed scenes and described in an interesting way the homes and orchards of leading fruit men from the Niagara River and the St. Lawrence Valley to Algoma and the Muskoka Lakes.

Fruit Packages in B.C.

W. J. Brandrith, Ladner

A meeting of B.C.F.G.A. delegates from the various sections of the province was held in Vancouver on Nov. 2, to discuss the fruit package question. It was unanimously agreed that the 4-5 qt. box should be 5½ x 5½ x 2 inches, and that the 2-5 qt. box should be 5½ x 5½ x 1 inch, and that the crates to hold these sizes should be the only ones manufactured. It was also decided that the box known as the "Oregon Cherry Box" be adopted for sweet cherries, and that the 4-5 qt. berry crate be adopted for sour cherries; that the plum crate now in use be adopted, and that a box 18 x 11 x 8½ inches be adopted for pears, and that a half box for pears shall be 18 x 11 x 4 inches; and that the pear and ½ pear box be used for crab apples. A resolution was passed, also, asking the Dom. Govt. to legalize the apple box for home use, as well as for export.

At a meeting of the executive committee held on Nov. 3, it was decided to hold the annual meeting in Nelson, B.C., on Jan. 23 and 24. The secretary was instructed to procure a sufficient quantity of spraying materials for the coming season.

Nova Scotia Convention

The annual convention of the N. S. F. G. A. will be held at Wolfville, on Dec. 12, 13 and 14. An interesting meeting is expected. Mr. A. McNeill, Chief, Fruit Div., Ottawa, will speak on "Horticulture in Nation Building" and "Orchard Management." Mr. W. T. Macoun, Horticulturist, C.E.F., Ottawa, will discuss various horticultural questions. Prof. F. C. Sears, Truro, will discuss "Spraying" and other topics of interest to fruit growers. Cooperation will receive full attention.

An exhibition of winter fruits on plates and in barrels and boxes will be shown. This will add much to the general interest of the convention. Fruit growers, not only in N. S., but from the other provinces, are invited to attend.

Montreal Fruit Trade Notes

E. H. Wartman, D.F.I.

The handling of fruits from boats and railroads is not yet perfect. Barrels and boxes are not only broken by careless handlers, but are "pilfered"—leaving the barrels slack. Think of a barrel of Kings landing at steamer sheds for export, head broken to pieces and 1½ pecks of the fruit taken out. This barrel, if landed in sound condition, would have brought 24s., but as it is 16s.—a loss of $2. The checkers at steamers would sign teamster's check 1bbl. slack"; but, who should pay to the shipper the $2 loss? I would like to carry a rubber stamp and have the authority of the Dominion Dept. to brand such broken, pilfered packages, "Pilfered and broken—not to go forward," and to notify shipper of same, so that he might collect for packages so rascally used.

Apples in our standard export boxes are thrown down instead of being laid down. Inspectors soon stop such work when on the spot. They have saved shippers hundreds of dollars, but, there are times when these goods are arriving at 3, 4, or 5 o'clock a.m., that we cannot be expected to be around after a hard day's work up to 12 o'clock the previous night.

Our shipments from this port are probably 75,000 bbls. short of last year to date. The fruit is in the country yet. Before the beginning of navigation next May the aggregate will total a large number.

Shippers are wise in not filling the last steamers full of apples. As the season for this fruit is a long one and the apple is a general favorite, we may look for good profits by keeping the ball rolling not too fast.

In a few cases No. 1 Fameuse have sold in 5 bbl. lots in this city already at $6 a bbl.

Important Announcement

In the House of Commons, on Nov. 26, the Hon. Sidney Fisher, Min. of Agr., intimated that an item would be placed in the estimates to encourage the establishment of cold storage warehouses throughout Canada. The proposition is to secure the equipment and establishment of cold storage plants where the conditions of trade seem to justify.

Mr. Fisher asked his colleagues to put in the estimates an item which would bring about the desired results. In a few days the estimates will be placed upon the table of the House.

The Ontario Horticultural Exhibition

LOVERS of flowers, fruit and vegetables in Canada have reason to congratulate themselves upon the success of the third annual Ontario Horticultural Exhibition held last week, Nov. 6-10, in Massey Hall, Toronto. The attendance, in spite of one rainy day, was considerably more than twice as large as last year. The total number of entries in all departments was some 2,000 greater than ever before. The quality, also, of the exhibits was much ahead of previous years.

The increased attendance was due to two reasons: the running of half-rate excursions to Toronto from all parts of the province and the presence of the Black Dike Band. This latter feature proved a costly attraction, but it went far to make the exhibition enjoyable to "the indifferent public," and thus to place the exhibition on a better footing for the future.

There will be a deficit, how large has not been ascertained. It is believed, however, that it will be little, if any, larger than last year, and that it will be possible to pay everything in full, as was done a year ago. There is reason to believe that the exhibition, at last, has been placed on a permanent basis. In time it may rival, in its way, even the famous Royal Horticultural Exhibition of London, England.

Visitors were lavish in their praises of the different exhibits. They were equally as enthusiastic over the large cauliflowers as they were over the American Beauty roses. The fruit excited as much interest as did the decorated dinner tables. The fruit and vegetables appealed to the inner man, while the flowers were a feast to the eye and mind. Combining the different branches of horticulture in one grand show has proved to be a movement in the right direction. It has met with the approval of the public. From now on, no florists are likely to even suggest the holding of a flower show of their own. This is a day of combines, and this combination has proved a success.

The arrangement of the exhibits was different from last year, and proved more attractive. The decorated dinner tables were placed in front of the stage, with a partition dividing them. The chrysanthemum groups were at the top of the stage, in the same position given the orchid groups last year. The latter were placed at the east side of the hall and showed up to excellent advantage. The mixing of exhibits of fruit and flowers on the same tables, which last year was not liked by many, was omitted. Each table was devoted to one class of exhibits. The box fruit was displayed in the basement, as also were the vegetables and the made-up floral work. Exhibits from the Ontario Agricultural College were placed both in the main hall and in the basement.

PLANTS AND FLOWERS

The arrangement of the chrysanthemum groups was not equal to former years. This was owing to the place in which they were located not being adapted to the displaying of groups of this nature. The palms and decorative plants used in these banks were better than in former years. Many of them were exceptionally well grown. The judge had no easy task to pick the winner.

In the orchid groups the judge again pronounced for quality as against quantity. There has never been as grand a display of orchids seen in Canada. The public probably did not realize how rare the collection was.

Some fine specimens were exhibited in the classes devoted to palms, ferns and decorative plants. The chrysanthemum bush plants were not as good as is usually seen, owing to the bloom not being developed. Had the exhibition been 2 weeks later, some fine plants would have been shown. One of the plants measured over 6 feet through. The single stem chrysanthemum plants were a surprise to many. Such good bloom was not expected for the season. The decorative plant class brought out some splendid specimen plants of better quality than those usually seen.

In the cut bloom classes there was a fine display. The quality of the chrysanthemums was high for the season. The exhibits in the carnation sections were not as numerous as last year, and the quality of the bloom was not up to the usual standard. The competition in the rose sections was keen. The quality of the bloom shown was much above the average.

The entries in the "made-up-work" were not so numerous as last year, but the class of work shown was an advance. The skill of the floral designer was made manifest in the keenness of the competition.

DECORATED DINING TABLES

The decorated dinner tables were judged by a committee of ladies selected by Mrs. Mortimer Clark. Their decisions were a surprise to some of the exhibitors. J. S. Simmons won first prize, A. Jennings second, Thos. Manton third, and J. H. Dunlop's table, set up by H. G. Dillemeuth, fourth. After the decisions were made THE CANADIAN HORTICULTURIST interviewed the ladies to find the reasons for the decisions. The ladies said that all of the tables were overdone; there were too many flowers used and they were arranged too high, so much so that they would obstruct the view of the guests. The principal objection to Mr. Simmons' table, outside of the flowers being too high, was the tying of the ladies' corsage flowers with a silk cord. This is only a matter of opinion. On the Jennings and Manton tables were bon-bon dishes that were not in keeping with the other dishes. They should have been either cut glass or silver. The fourth prize table evidently had a large amount of time and thought expended to produce the results but, in the opinion of the ladies, it was overdone. The shades on the candelabra did not harmonize with the other colors on the table. The fish knife and fork were incorrectly placed. There was too much space between the cutlery. A table cloth should have been used, and not lace mats, as, in serving a dinner, the top of the table would have been damaged by the hot plates. The setting was more suited for a fruit luncheon. A guest seated at the table for one and a half hours, they thought, would find the electric lights very trying on the eyes. The proper method of lighting a table is to have the lights on a level or just below the eyes. There was, they thought, too much ribbon used on this table. By many of the general public, who did not take note of these points, this table was liked the best of all. The dishes on the tables were minutely examined by the judges, even to the salt dishes, and the unanimous opinion was that the tables were not equal to those of last year. The judges were surprised to find so many of the tables decorated with orchids. A greater variety of flowers would have been better. They found it difficult to judge the tables in the afternoon owing to the tables being set for an evening effect. The judges recommended that next year the exhibitors should produce a simpler effect in their decorations.

THE FRUIT EXHIBITS

The show of fruit was an advance on anything of the kind held in Canada. The competition was closer both in plate fruits and in commercial packages. A. McNeill, Chief, Fruit Division, Ottawa, said that Ont. is the pupil of B.C. in packing, but at the recent fair at New Westminster, B.C., there was no packing that equalled some at the Toronto show. It is fair to say, however, that the general run of box fruit from B.C., seen in our markets, is much better than that put up in Ont.

While the packages at the show were a superior lot, a number of defects were noticed. The sides of the boxes, in many instances, were too thin; the best thickness is from 3/8 to 1/2 an inch. The tops and bottoms were too heavy; these should be not more than 5-16 of an inch. The ends of the boxes, as a rule, were correct, which is 5/8 to no more than 3/4 of an inch thick. Some boxes had cleats running up and down on the ends; this is unnecessary and adds to the cost. A few boxes were roughly sawed. Smoothness is necessary to good appearance; fine saw-cut or planed material is best. On the whole, the finish of the boxes was good, but some exhibitors forgot to put cleats across the top and bottom at the ends. This is a grave defect as, though not detracting from strength, it does not protect the bilge. The kind of material used was fairly good; elastic woods, like spruce, are better than basswood.

The character of the pack-system showed a great improvement over past efforts. In a few boxes inferior packing more than offset the quality of fruit. A number of exhibitors failed to pack with due regard for the proper bilge. There was not a great variety of styles in packing. Evidently packers spent their energy in selecting apples of suitable size, rather than in selecting a pack to suit the size of apple. On many boxes, lace paper added to the appearance, but packers should see that it is placed only on the sides and not continuous around the box. In some boxes were found apples that had defects sufficient to disqualify them; among these, considerable "ink spot" or "fly spot" was noticed.

Some poor branding was noticed. The judges discriminated against lead pencil markings. None of the branding was quite up to the standard. In many cases the stencil was used when the steel die would have been better. The latter is neater and the printing can be done when the boxes are made, except the grade and tier marks. Mr. McNeill suggested that Ont. growers should mark the number of tiers on the box as well as the grade.

The pears in boxes were put up equal to the best California pack. The peaches, also, were well packed. They had been wrapped and kept in cold storage. The way in which they came out showed the value of both the storage and the wrapping. Some growers had neat labels on the wrappings, that showed the fruit to good advantage.

In the competition in barrelled fruit, every feature of good barrel packing was illustrated. It is believed there will not be found in any part of the world better barrel packers than in Ont. Most of the barrels used were 8-hooped and, other things being equal, these scored a point or two more than those with only 6 hoops.

A feature of the fruit shown on plants were the county exhibits. Among the most noticeable were the counties of P. Edward, Durham, Northumberland, Lambton and Norfolk. Oxford Co. sent some beautiful Baldwins; Norfolk and the united counties of Northumberland and Durham, a fine display of Spys. While the county exhibits were good, they did not give a fair comparison of what each county can do. The size of the exhibit from a particular county does not count for much in estimating the fruit industry of the county. A county, unimportant in fruit matters, might send an exhibit larger than those sent by more important counties. The prize list should be arranged in a manner that will bring out more exactly the comparative capabilities of the different counties.

There was a large and excellent display of table fruit. A noticeable feature to the observer was the way in which the immense red apples, like Wolf River, appealed to the general public, when otherwise such varieties are of no particular value. There were some Cayugas that measured 14½ inches in circumference. Most of the apples were highly colored and well finished.

Considerable dissatisfaction was expressed over the decisions of the judge on plate apples. Wrong judgment was shown in many classes. In Spys, the awards seem to have been made with eyes closed. First prize Fameuse were scabby.

In the class for cooking varieties, Mann, Fallawater and Baxter were given preference over Fall Pippin, Ontario and Bellfleur. In class III, dessert apples, Baxter received a prize as "any other desirable variety," and in class IV, cooking apples, the same variety was given a place as "any desirable seedling." These are a few of the many inexcusable mistakes that occurred. It is evident that the judge, who is not an apple man, did not know his business. He should not have been given the responsibility of deciding on fruit that he doesn't know much about, and he should not have accepted it.

The class devoted to pyramids of fruit brought out many entries. The display was good. The fruit was high-class, although a few defective specimens were noticed that should have been left at home. Showing apples in pyramids is a good feature. It is the most attractive form of table decoration. Peaches, pears and grapes on plates added much to the fruit section of the show. Fine specimens of each class were shown.

CENTRAL EXPERIMENTAL FARM

As usual, the C.E.F. had an exhibit that was a credit. It showed the character and progress of the work being done by Mr. W. T. Macoun, the horticulturist. When the C.E.F. first showed fruit, the apples were nearly all fall varieties. Since then the proportion of winter varieties has increased each year. Out of 57 varieties on exhibition this year, 23 were late keepers. This is evidence that the work is progressing in the right direction.

Among the leading varieties exhibited and recommended for planting in northern sections were: Milwaukee, early bearer, productive, hardy tree, very acid in flavor—now being crossed with McIntosh to improve flavor; Baxter, good, early to midwinter ; Forest, good quality, late keeper, hardy—also being crossed with McIntosh; Winter Rose, mild flavor, hardy; Scott's Winter, good but small; and Stone, large, hardy, originated in Vt.

The display of grapes was grand. One wonders that such delicious flavored, well-bunched grapes can be grown out of the grape belt. Every variety grown in the Niagara district was in the C.E.F. collection. All were well ripened. Besides these, a number of other varieties were shown. Mr. Macoun is working on the production of early ripening varieties for planting in semi-northern districts, where now grape growing is not a good commercial proposition. Among the best varieties for the home garden in those districts are, in red, Moyer, Brighton, Lindley and Delaware; in black, Moore's Early, Campbell's Early, Worden and Wilder; in white, Moore's Diamond.

EXPERIMENT STATIONS' EXHIBIT

The Ont. Exp. Sta. had a nice exhibit, but not up to the standard of some others in past years. It was in charge of L. Woolverton, Grimsby. Eight stations sent contributions. The arrangement was good, the main feature being central pyramids of the best varieties for growing in the various districts. Mr. Woolverton showed the "Princess Louise" apple that was originated on his own farm. It is a New Year dessert variety, valuable for the home garden, but not productive enough for market. For the first time an exhibit of vegetables grown at an experiment station was shown. Work in this line has been commenced at Leamington and is in charge of E. E. Adams. The exhibit was a creditable one, containing 30 varieties, all good stuff, including sweet potatoes.

The exhibit from Algoma, the station farthest north, contained 17 varieties. Those best suited to the section are Wolf River, Colvert, Winter Arabka and Longfield. The St. Lawrence Sta. sent 23 varieties, including Scarlet Pippin, Snow and Baxter. Milwaukee, also, was shown, and is recommended by the station this year for the first time. In the Lake Huron sta. exhibit there were 24 varieties, including Wealthy, Bottle Greening and W. Arabka. As would be expected, the Bay of Quinte sta. sent an excellent exhibit, comprising 25 varieties. Fine specimens of the leading varieties were shown.

The most attractive exhibit came from the Burlington sta. It included 50 varieties, among them a number of southern kinds seldom heard of here. Repeated tests with such varieties show that they do not succeed well in our climate. We require apples that have originated in Canada or on similar latitudes, such as Minnesota. The Burlington exhibit included 38 varieties of fruit in bottles, put up in antiseptic solutions. A showy exhibit was shown by the station in Simcoe Co. It contained 40 varieties, among them the immense Wolf River apple that attracted more attention than any other apple at the exhibition. A new apple from Wisconsin called "Peerless," a seedling of the Duchess, was shown; it promises to be worthy of further trial in this province.

O. A. C. EXHIBIT

The O. A. C. biol'l dept. put up an exhibit of educational value. Many of the insect and fungous pests that trouble the fruit and vegetable grower were shown either mounted or in antiseptic solutions. A good display of material used in the teaching of nature study, as well as some work of pupils, was on exhibition.

The hort'l dept. had an exhibit of fruits and vegetables. There were 78 varieties of apples, among them 7 varieties that have been held in cold storage since the season of 1905. Those that came through best were Stark, Lawver, Salome, Ben Davis and Gano; the others were Blenheim and Ribston. A new apple was shown called "Champion." It was originated by the Stark Nursery Co., of Mo. It is a late winter variety of medium size, fair color—a little better in most points than Stark.

Among the vegetables were 43 varieties of beets, including the standards, Eclipse and Meteor. There were 23 varieties of carrots, including nice specimens of Shantenay, Rubicon and Scarlet Nantes in intermediates, and English Horn in short. Among the onions was a new one that is large, productive and even in size; it is one of Sutton's and is called "Ailsa Craig." Some nice winter radishes were in the collection, including some white varieties that are milder in flavor than the other types; a good one is Osaki.

VEGETABLES

The vegetable exhibit was larger in number of entries and superior in quality to that of last year. The display of cauliflower was grand. The various collections were good. While the prize list called for only 25 varieties in each collection, there were shown, in some, about 50 varieties. Had the prize list called for 25 classes rather than varieties, the requirement would have been more comprehensive. One of the best collections was that of Mr. Thos. Delworth, Weston, Ontario. It was the most artistically arranged, but, as celery was lacking, it did not receive the consideration that it otherwise would. The first prize collection, put up by W. Harris, Humber Bay, was a credit to the grower.

In the other classes, competition was close. White artichokes were extra fine. Beets, both long and globe, were good. The Brussels sprouts were the finest ever shown in the province. The public should know and use this delicious vegetable more than now. Cabbages were excellent, but one or two entries crept into the flat class that did not belong there. In the cauliflower classes there were 26 entries, any one of which was a credit to the producer. Some excellent celery was shown, but in the red class, pink varieties were given preference over the red. The carrots were good and clean. Egg plants were good for the season. The endive specimens were all right in size, but they should have been more bleached.

There were shown some extra large specimens of khol-rabi; in fact, size was produced at the expense of quality. The leeks were extra fine. Lettuce was good, but there was not enough competition. The onion exhibit was a superior one; those in ropes attracted much attention. Some nice parsnips were shown; one of the finest in size and smoothness did not win a prize on account of the crown being too coarse and large in proportion to the rest of the specimen. Peppers were good. There were some nice winter radish, but the competition was small. The same may be said of turnip radishes. The salsify exhibits were good, also the squash and citron.

There was not a large competition in the potato classes, but the entries shown were clean, smooth and creditable. The collections of vegetables grown in York County comprised specimens that could not be beaten anywhere.

The County Exhibits Were a Feature of the Fruit Department

So numerous were the entries that it was impossible to display them to best advantage. There was not enough room to avoid crowding.

MISCELLANEOUS

The exhibit of honey and apiary supplies was good in quality and fairly well arranged. It could be improved by the adoption of brighter and more attractive labels on the bottles and jars.

The Biggs Fruit and Produce Co., Burlington, were on hand with a display of choice, wrapped

apples in boxes. The exhibit was attractive, the apples being of high quality and neatly packed.

An exhibit of Spencer Seedless apples attracted much attention. A number of specimens were cut and given to fruit growers and others interested. Information regarding the variety was disseminated by members of the company.

A standard Wallace Sprayer was on exhibition. Mr. W. H. Brand, Jordan Station, was in charge and expounded upon the many merits of this well-known and well-tried machine.

Horticultural manures in variety were exhibited by The Arnott Chemical Co., of Toronto. An exhibition of fruits, flowers and vegetables would not be complete without the presence of the fertilizers that produced many of the first prize specimens.

Important to Vegetable Growers

THE horticultural department at Guelph, the holding of vegetable growers' meetings throughout Ont., the increasing of the government grant of the assn. and the advisability of urging the establishment of vegetable expt. stations at central points throughout Ont., were 4 important matters discussed at the meeting of the directors of the Ont. Vegetable Growers' assn., held in Toronto, Nov. 7, at the time of the Ont. Hortl. Exhibition.

A special committee, composed of Joseph Rush, of Humber Bay; T. Delworth, of Weston, and W. C. McCalla, of St. Catharines, who had been appointed to visit the college to find what work was being done there for the benefit of the vegetable growers, and to make suggestions for new lines of work, presented their report.

The committee reported that at the time of their visit the crops at the college looked well, especially the onions and a few rows of asparagus planted the past spring. An exception was the early cabbage, which had been almost entirely destroyed by root maggot. In view of the fact that the O.A.C., in Bul. 122, gives remedies for this pest, the committee reported that they were surprised to find that these remedies were not in use. In the opinion of the committee, the value of the work done at the college would be much increased if the remedies suggested in the bulletins were found in actual operation there, so that visitors would be able to judge their work. So far as they were able to learn, no attempt had been made at the college to combat the root maggot.

On the trial grounds, a number of different varieties of vegetables were found to be under test. Some vegetables, such as beans, peas and celery, were not included in the test. The department of entomology had issued a bulletin on "The Common Fungous and Insect Pests of Growing Vegetable Crops." Experiments have been conducted this year with remedies for the radish root maggot, but no definite conclusions have been reached so far. Prof. Harcourt has been doing valuable work through experiments with fertilizers. Prof. Zavitz has conducted experiments of great interest in the growing of potatoes. In their recommendations, the committee expressed the opinion that it was a mistake for the dept. of horticulture to devote itself almost exclusively to variety tests. Many of the varieties under test are inferior, and were discarded long ago by gardeners. In the case of lettuce, out of the 91 varieties under test at the college, growers have found that only 6 or 8 are worth growing. The committee believes that the rest should be discarded and that in future the college might confine itself to testing the novelties introduced each year by reliable seed firms. It believes that this plan would much reduce the work of the college without impairing its value.

They suggested that work be attempted along the line of improvement, by seed selection or otherwise, of the best known varieties. The conducting of experiments to determine the best methods of fertilizing and preparing the ground, of planting, of cultivating, and of protection from insects and fungous enemies and of handling the mature vegetable crops; that these experiments should be conducted with a view to their value to the commercial grower. The initiative, they believe, belongs to the dept. of horticulture. In conclusion, the committee expressed the opinion that the college and growers should keep in close touch with each other.

In a discussion that followed the reading of the report, the members of the committee made statements that were stronger than any contained in the report. The view was expressed that the hortl. dept. lacks a proper conception of the work it should undertake. Instead of branching out along new and important lines of work, it apparently has been content to do about as little as possible. Some of the directors stated that when they had asked for the appointment of a vegetable expert at the college, they thought that this expert would be given considerable power of initiative, but, apparently, he has been treated as but little better than a hired laborer. It was finally decided to lay the matter fully before the Minister of Agriculture. Later, the full board of directors waited on Hon. Mr. Monteith and presented their views to him fully. The assn. made application to the Dept. for an increase in its grant from $600 to $1,000. The assn. has 150 more members than any other assn. in the province. Its grant is only one-third of that of the Ont. Fruit Growers' Assn., and $400 less than the grant to the Bee Keepers' Assn.

A report was read from a committee composed of representatives of the Kingston and Ottawa branches, who had been appointed to visit the Central Experiment Farm at Ottawa to ascertain what work is being done there. The report merely mentioned lines of work being undertaken at the farm, and did not offer any criticisms or suggestions for new work. Mr. Bushell, of the Kingston branch stated that the growers in the vicinity of Kingston feel that a vegetable expt. sta. should be established near there and he asked for the cooperation of the Ont. Assn. in securing such a station. While the matter was being discussed, it was suggested that vegetable expt. stations might be established throughout the province on the same lines as the Ont. Fruit Exp. stations This suggestion met with considerable favor. It was felt, however, that the assn. has been moving rather rapidly, and that it would not be wise for it to press for these improvements all at once.

A committee composed of Messrs. McCalla, Macoun and McMeans, who had been appointed to judge the essays in the essay competition, presented its report. The winners are as follows:

Potato culture—4 essays received.—1, W. A. Broughton, of Sarnia; 2, F. F. Reeves, of Humber Bay; 3, H. A. Blunden, Sarnia.

Cauliflower culture—4 essays received.—1, A. Knight, Cataraqui; 2, T. Delworth, Weston; 3, J. N. Watts, Portsmouth.

Tomato culture—2 essays received, one of which was received after the competition had closed and therefore was ruled out.—1, J. N. Watts.

(*Continued on page* 320)

THE POST OFFICE DEPT. saves you money, labor and worry. Take advantage of it by ordering your requirements through the mail direct from the advertisers in this paper, and thus save the middleman's prices. Mention this paper and thus insure prompt and courteous treatment. See our Protective Policy on the editorial page.

The Arnott Chemical Co., whose advertisement appears on another page, are now manufacturing their special manures in Canada. These fertilizers are carefully made from the best ingredients, as proved by their crop producing powers. The advantage of growers being able to obtain such high-class fertilizer manufactured in Canada, thus saving the import duty, cannot be overestimated. One specialty, their Concentrated Soluble Odorless Horticultural Manure, we can highly recommend to amateurs, especially ladies, as it is clean to handle and free from objectionable smell. It is invaluable for plants in the house, keeping them healthy and vigorous during the winter months.

The Sovereign Bank of Canada

Chartered by Dominion Parliament

A NEW CANADIAN RECORD

31st October	Capital Paid-up	Reserve Fund and Undivided Profits	Sovereign Bank Notes in Circulation	Deposits	Excess of Assets over Liabilities to the Public
1902	$1,173,478	$ 240,000	$ 759,995	$ 1,681,730	$1,413,478
1903	1,300,000	362,838	1,237,650	4,309,432	1,662,838
1904	1,300,000	420,373	1,284,840	7,196,741	1,720,373
1905	1,610,478	523,461	1,550,790	10,134,209	2,133,939
1906	3,942,710	1,335,847	2,850,675	15,578,920	5,278,557

31st October	Cash on Hand and at Bankers	Bonds, Debentures, etc.	Loans at Call	Commercial Loans and Discounts	Total Assets
1902	$ 383,097	$ 439,363	$1,630,199	$ 1,358,469	$ 3,855,203
1903	622,774	713,397	1,747,342	4,074,048	7,209,920
1904	1,214,822	672,034	1,179,540	7,014,123	10,201,954
1905	1,491,398	791,153	1,566,144	9,578,850	13,818,938
1906	3,916,842	1,612,831	4,614,067	14,640,510	25,343,401

SAVINGS DEPARTMENT AT ALL OFFICES

Deposits of $1.00 and Upwards Received — Interest Paid Four Times a Year

Mention The Canadian Horticulturist when writing.

The Sovereign Bank of Canada

OFFICE OF THE 2ND VICE-PRESIDENT AND GENERAL MANAGER,

MONTREAL, November 10, 1906.

To the Shareholders, The Sovereign Bank of Canada:

WE have pleasure in enclosing herewith statement of the Bank's position as at the close of the fiscal half-year, ending 31st October, together with comparative statistics for the past five years. The figures require no special explanation, and we feel sure the progress and stability which they indicate will afford the proprietors and friends of the Bank complete satisfaction.

The Bank's American and Foreign business has now attained considerable importance. Our connections abroad, as well as our facilities at home, enable us to handle British, Continental and American transactions entrusted to us on a favorable basis, and the results so far have been satisfactory to all concerned.

Our principal business is, of course, confined to Canada, and is concentrated in the provinces of Ontario and Quebec, which long experience has proven to be the safest territory in the Dominion for the conduct of a general and commercial banking business. In these two provinces the Bank has 55 branches and 22 sub-offices, the latter being managed from central points, and in some instances open only two or three days a week. We have not yet opened any branches in the North-West, as competition there seems to be unusually keen, but with the undoubted progress which the country is making, these conditions will probably right themselves later on, and in the meantime we have very satisfactory banking arrangements for the conduct of business throughout that territory.

The capital of the Bank ($4,000,000) will be fully paid up in a few months, and it is a source of great satisfaction to know that our shareholders number nearly 1,200 and include some of the most powerful financial people in the world.

The Sovereign Bank is at present the eighth largest chartered bank in Canada in point of capital. Its assets amount to $25,343,401, a large part of which are "liquid," and the continued growth of deposits testifies to the popularity of the institution throughout the country.

The Note Circulation shows an advance of 83% over last year, and both the Circulation and Deposits have increased materially since the present statement was compiled.

The past half-year is the best the Bank has ever had, and we have every reason to think that the current half-year will be at least as good.

Your obedient servant,

D. M. STEWART,
General Manager.

Half-Yearly Statement

31st October, 1906

LIABILITIES

Capital Stock paid-up	$3,942,710.00	
Reserve Fund and Undivided Profits	1,335,847.22	$5,278,557.22
Notes of the Bank in circulation		2,850,675.00
Deposits Payable on Demand	$5,685,321.09	
Deposits Payable after Notice	9,893,598.66	15,578,919.75
Other Liabilities		1,635,249.15
		$25,343,401.12

ASSETS

Gold and Silver Coin on hand	$ 538,989.58	
Dominion Government Notes on hand	1,121,447.00	
Notes and Cheques of other Banks	1,155,304.99	
Balances with Bankers	1,101,101.00	
Cash Assets	$3,916,842.57	
Cash Deposited with Dominion Government for Security of Note Circulation	80,000.00	
Provincial Government and other Securities	1,612,831.16	
Call and Short Loans Secured by Bonds, etc.	4,614,067.00	$10,223,740.73
Commercial Loans (less rebate of interest)	$14,640,510.40	
Bank Premises, Real Estate, Safes, etc.	473,837.57	
Other Assets	5,312.42	15,119,660.39
		$25,343,401.12

D. M. STEWART,
General Manager.

Comparative Statistics

LIABILITIES

31st October	Capital Paid-up	Reserve Fund and Undivided Profits	Sovereign Bank Notes in Circulation	Deposits
1902	$1,173,478	$ 240,000	$ 759,995	$1,681,730
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ASSETS

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1905	1,491,398	791,153	1,566,144	9,578,850
1906	3,916,842	1,612,831	4,614,067	14,640,510

GENERAL

31st October	Total Assets	Excess of Assets over Liabilities to the Public	Branches and Sub-offices	No. of Shareholders
1902	$3,855,203	$1,413,478	17	757
1903	7,209,920	1,662,838	28	819
1904	10,201,954	1,720,373	42	854
1905	13,818,938	2,133,939	53	1,004
1906	25,343,401	5,278,557	78	1,195

N.B.—This Bank commenced business 1st May, 1902.

D. M. STEWART,
General Manager.

Apple Yield Less Than Anticipated

WHILE some apple districts report yields up to, or above, expectations, the crop on the whole has proved to be less. Many adverse conditions decreased the percentage of No. 1 fruit. Prices f.o.b. have been fairly good. Many consignments to the Old Country have given excellent returns. Most growers who sold their apples by the lump in orchard, failed to realize full value for the crop. Advices from various points indicate that fair quantities of apples are still in the country, being held in storage. Correspondents of THE CANADIAN HORTICULTURIST report as follows:

GREY COUNTY

Meaford.—Between 25,000 and 35,000 bbls. of apples will be the output from this point. The yield is above expectations. Large quantities have been shipped to the West.—J. D. Hamill.

KENT COUNTY

Chatham.—Yield has been light. Codling moth and San José scale ruined a large percentage of the crop. Canning factories paid 50c. a cwt., and evaporators 25c. a cwt. for good stock. Good returns are expected for apples consigned to the Old Country.—Milton Backus.

LAMBTON COUNTY

Arkona.—Crop is above the average. No apples stored. Prices fairly good. Some cars sold for $2.50 for No. 1, $2 for No. 2. Consignments have netted about $2.—W. J. Seymour.

NORFOLK COUNTY

Simcoe.—No apples stored. Sprayed orchards yielded well, some netting $200 an acre. —W. Olds.

WENTWORTH COUNTY

Fruitland.—Crop short of anticipations. Codling moth, winds and frosts did much damage. Buyers report 75% of crop to be No. 2. Prices ran from $1 to $1.25 picked in orchard. Prices now quoted by dealers are variable, some as high as $3.50 for No. 1 Spys. Fair prices may be expected for good No. 1 or Fancy stock. Large quantities have been placed in cold storage in Hamilton.—Joseph Tweddle.

OXFORD COUNTY

Ingersoll.—Yield above the average. About 2,000 bbls. stored in town. Prices have been satisfactory, ranging from $1 to $1.75 a bbl. picked from trees.—J. C. Harris.

MIDDLESEX COUNTY

Ivan.—Prices have been satisfactory. Not many bbls. are in storage here. Quality is good from sprayed orchards.—E. T. Caverhill.

HALTON COUNTY

Oakville.—Crop ¼ less than predicted. Not many bbls. stored. Prices ranged from $1 a bbl. on trees to $1.25-$1.40 a bbl. picked. Apples sold, packed, f.o.b. or consigned gave better returns.—W. H. MacNeil.

Burlington.—Few apples are stored. Prices have been good. Nos. 1 and 2 averaged $1 a box, some much higher. No. 3's brought $1 a bbl. net.—W. V. Hopkins.

HASTINGS COUNTY

Belleville.—Crop only medium; less than early predictions. About 6,500 bbls. stored. Prices have been fairly good. Spys have realized 19s.; Snows, 17s.; Greenings, 17s. 6d.—F. S. Wallbridge.

LEEDS AND GRENVILLE

Maitland.—Crops not up to early expectations in quantity or quality. Codling moth did much injury. No. 1 Fameuse are selling at $3 to $4.50 a bbl. in local markets.—Harold Jones.

DURHAM COUNTY

Newcastle.—Prices have been fairly good. A number of orchards were sold at $2.25 a bbl., tree run, Nos. 1 and 2, f.o.b. and netted the growers about $1.60 for the apples. One grower sold for $2 a bbl. tree run. Small orchards were sold at $1 to $1.25 a bbl. on the trees. About 10,000 bbls. have been stored in this vicinity.—H. C. Bowen.

MONTREAL DISTRICT

Westmount.—Crop above expectations. Coopers report that growers underestimated the yield, as evidenced by additional orders for bbls. In Montreal No. 1 Fameuse are bringing $4, and No. 2, $2.25 to $2.75 a bbl; Mackintosh red, $5 to $6 for No. 1 and Fancy. Montreal wants apples in barrels, not boxes. Apples for export rushed in before close of navigation in large quantities. More apples are being held in cold storage in the country than last season. Probably prices will drop for a time; towards spring they will pick up.—R. Brodie.

Henrysburg Centre.—20,000 bbls. of apples were sold to speculators at 90c. to $1 a bbl. They are now selling in Montreal at $2.50 to $3.50. Who made money?—John Spencer.

A large company of fruit growers and others has been organized in N.S. to be known as Hillcrest Orchards, Limited, with headquarters at Kentville, N.S. Mr. Ralph S. Eaton is the pres. and mngr. The authorized capital is $75,000 and subscribed, $55,000. If you are interested, send for the prospectus, with accompanying booklet of views.

The cut of the 1st prize decorated dining table, on page 301, was exhibited at the Ont. Hort'l Exhibition, by J. S. Simmons, Toronto. The 2nd prize table, on page 302, was shown by A. Jennings, Toronto. The White Globe onions, on page 303, were the product of the gardens of J. N. Watts, Portsmouth, Ont., and won a special prize.

ABUNDANT CROPS OF HIGH QUALITY FOLLOW THE USE OF

Tobique Plaster
OR GYPSUM

ALL KINDS OF LAND REQUIRE THIS FERTILIZER

Fruit Growers—Flower Growers and Vegetable Growers

SHOULD USE TOBIQUE PLASTER

SPREAD IT ON YOUR LAWN OR GARDEN
THOUSANDS OF TESTIMONIALS FROM USERS

R. C. Mosher, Manager, Plaster Rock, N.B.

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A LARGE PORTION OF

The Best Fruit
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was grown from stock supplied by us years ago. Our stock is as good to-day as it has been in the past. This should be a good enough reason why you should buy your Trees, Shrubs, etc., from

The Helderleigh Nurseries
E. D. SMITH, WINONA, ONT.

Mention The Canadian Horticulturist when writing

Prince Edward Island Letter

Rev. Father Burke, Alberton

Looking over the year's operations in fruit growing in this section, there is nothing too cheerful in the retrospect. We came out of winter conditions well last spring; so well, indeed, as to have high hopes as to the result in crop. The blossoming period rather buoyed up these hopes; there was an abundance of flowers everywhere, except on plums. The fixing time opened our eyes to the possibility of only a moderate return in fruit. Even the prospects of those days were not to be maintained; a further falling off occurred. All through the summer season, with its excessive drought, there was a continuous dropping. Worms, despite the regular sprayings, were more numerous and persistent in attack than usual, and contributed to the abnormal amount of falling apples. When all were gathered in, therefore, we had not ¼ of a crop. "Too many blossoms exhaust trees as badly as too much fruit," say the knowing; and this largely is given as the cause of the shortage.

Well-attended orchards are satisfying their owners even this year. A few hundreds of barrels of good apples are worth as much as twice the quantity in full years. The samples put on the markets from our own orchards are very creditable. Gravensteins from N.S. are smaller and scabbier than usual this fall. There is nothing like rigid inspection to elevate the moral standard.

We have had a severe loss to our horticulture in the death of our inspector-instructor, Mr. Richard Burke. He was in his 76th year, but nobody would have thought him half so old. He had taken a deep and more than ordinary interest, in fruit-growing from his early days; indeed, he belonged to a family with a peculiar taste for the studies which horticulture imposes. He was at the beginning of all association work here, and contributed his full share to the spread and maintenance of the sane ideas it inculcated. Who can take his place with the same acceptance? He had knowledge and could impart it; he had unbounded faith in the fruit interests here, and could inspire others with it; he understood his official duties and fulfilled them scrupulously; and still did not bother himself unduly with the letter which killeth, but never interpreted the spirit of the ordinances under which he worked, and, therefore, helped the community he served and the administration whose servant he was. He was a model man, a lovable scientist, an honest official, a public-spirited and self-sacrificing citizen, and a model husband and parent. Representing the horticulturists of P.E.I., we are glad to acknowledge his worth before our fellows of the Dominion. May he sleep well!

The winter meets are on for this month. Amherst leads off, Dec. 3–6; P.E.I. F.G.A. meeting is posted for Dec. 10 and 11 at Charlottetown; and N.S. F.G.A. at Wolfville on 13 and 14. Those meetings are likely to be the most important in the history of the assns. holding them. The work done and left undone, at Ottawa, will likely occupy an important place on the Agenda paper. It is well that a strict reckoning be kept of all these conventions.

Nova Scotia Letter

G. H. Vroom, D.F.I., Middleton

Nearly all apples are safely housed. Shipments continue brisk from Halifax to the Old Country markets, and satisfactory returns are coming back for good clean fruit. The famous N.S. Gravenstein is in disgrace in the foreign market, due to the fact that it is badly spotted this season; consequently, the price is low.

There is an improvement in the N.S. pack this year. The better thinking dealers and growers realize the importance of getting their fruit on the market in good condition. There are a few, however, who are slow to learn. Several fines have been imposed for violating the Fruit Marks Act.

Up to Nov. 17 about 140,000 bbls. of apples have been exported. The steamship people handle the barrels carefully at the docks, and few packages are broken or damaged. Prices in the local markets range from $1.25 to $2 for No. 2, and from $2.50 to $3.50 for No. 1, according to variety.

British Columbia Letter

C. P. Metcalfe, Hammond

Orchard trees are going into winter quarters in good shape. Light frosts some weeks ago ripened the wood and defoliated the trees. It is a good sign in this province to see the foliage drop early, as it usually hangs on till late in the season, indicating that the sap circulation is still going on, and that the wood is not ripened and prepared to withstand the sudden advent of winter weather.

The first winter spraying with double-strength Bordeaux will soon be in order, to catch the spores of fungous diseases; viz., "dead spot" or "bark canker" (*Gloeosporium malicortis*) on apple trees, and the "brown rot" (*Monilia fructigena*), in plums and cherries. Previous to the spraying all mummied and decayed plums should be gathered, and either burnt or buried, to prevent the spread of the spores. Spraying is not generally practised in this province, but is coming to be recognized more as the benefits to be derived become more apparent. If thorough inspection of the orchards were made by the provincial fruit pest inspectors, backed up by practical and systematic demonstrations of spraying, covering 2 or 3 years, on the part of our Provincial Govt., it would assist greatly in the education of fruit growers.

A special meeting under the auspices of the B.C. Fruit Grs. Assn., was held in Vancouver, on

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FOR EXPORT

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NORTARD & LOWE, LONDON
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These are the largest and most reliable fruit merchants in Great Britain. Your interest demands the securing of our prices and terms of sale before selling your crop. . . . Write to-day Market cables received every sale day

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Mention The Canadian Horticulturist when writing

THE IMPORTANCE OF

Potash for all Fruit and Garden Crops

ought not to be underestimated by ORCHARDISTS AND TRUCK FARMERS, whose object it is to make the soil produce to the utmost of its capacity and yield at the same time PRODUCE OF FIRST-RATE QUALITY. DON'T FORGET THE FACT THAT POTASH PROMOTES MATURITY and counteracts the effect of an excessive amount of Nitrogen.

¶ STABLE MANURE contains too much Nitrogen in proportion to its Potash and Phosphate, so that when applying a dressing of Stable Manure some Potash and Phosphate ought to be added as a balancer. While Sulphate of Potash is (according to eminent authorities) the form in which to apply POTASH to POTATOES, TOBACCO and SUGAR BEETS, Muriate of Potash will give equally good results with most other crops.

¶ POTASH in the highly concentrated forms of SULPHATE OF POTASH AND MURIATE OF POTASH is obtainable of all leading Fertilizer Dealers.

Pamphlets treating of the cultivation and fertilization of all crops on the farm will be sent FREE on application.

The Dominion Agricultural Offices
of the Potash Syndicate
104 Sparks Street - Ottawa, Ontario

Mention The Canadian Horticulturist when writing

Nov. 2, for the purpose of determining the shape or form of baskets for the coming season. It was a representative gathering of delegates from the different fruit growing sections of the lower mainland and Vancouver Island. For strawberries, a shape 2 inches deep by 5¼ square, holding 4-5 of a qt. and for raspberries, blackberries and Loganberries, the half size, 1 inch deep by 5¼ square, holding 2-5 of a qt., were agreed upon. In addition, they agreed to use the ½ size of the standard apple box for crabapples and pears in addition to the full sizes. A committee was appointed to interview the Supt. of the Dom. Ex. Co. here with a view to obtaining a lower billing weight on crates and also a lower rate to Winnipeg and other points.

Items of Interest

A successful orchardist is Mr. H. Curen, Huron Road, Ont. He advocates the fall cleaning of orchards to destroy insect and fungous pests. A recent issue of *The Goderich Star* gave an account of Mr. Curen's methods and achievements.

Recently Mr. M. F. Rittenhouse of Chicago, who donated a farm for fruit and vegetable experiments in the Niagara district, had a conferenee with Hon. Nelson Monteith and Hon W. J. Hanna. He purposes building a model piece of macadam road from the G.T.R. at a point where a station eventually may be established to the lake, passing the farm.

At a recent meeting of the Toronto branch, Ont. Veg. Grs. Assn., Mr. Jas. Stevens, Todmorden, discussed "Growing Early Vegetables," particularly as affected by the tariff. He said that he cannot grow early cabbage and cucumbers and compete favorably with similar products from the U.S. Canadian growers should have more protection, he claimed, so that they can have the full benefit of the home market. At the next meeting of the branch, Dec. 1, H. E. Reed, Danforth Road, will discuss "Growing Lettuce under Glass," and J. W. Rush, Humber Bay, "Growing Radish under Glass." The annual election of officers will also take place.

Satisfied Advertisers

"Our advertisements in THE CANADIAN HORTICULTURIST have brought us more business than any advertising we have done elsewhere. We are much pleased with the results that have been received from same. THE HORTICULTURIST gave particular attention to the matter of setting up our advts. in an attractive manner." Thus wrote Mr. O. G. Palm, manager for the Little Giant Sprayer Mfg. Co., 41 Colborne St., Toronto. The company is erecting a large factory in Simcoe for the manufacture of their well-known machines. The change in the location of their factory has been brought about by the great increase that has taken place in their business during the past year. Their new auxiliary pump is proving a great success. Other improvements just as valuable will be found in The Little Giant for 1907. Fruit growers should place their orders early.

Mr. O. G. Palm

Changes in Constitution

Some important changes were made in the constitution of the Ont. Fruit Grs. Assn. at their recent convention. The following clauses now read as follows:

7. The directors shall be elected at the morning session of the last day of the annual meeting, and shall be 13 in number, representing the 13 agricultural divisions as set forth in Schedule "A" of the Ont. Agri. and Arts Act. Those 4 directors who have occupied positions on the board for the longest period thall not be eligible for re-election. It is provided, however, that these directors shall be eligible for re-election at the end of one year.

The clauses 24 to 28 are substituted by clauses 24 to 27 as follows:

24. Fruit growers in any section of Ont. may form a local assn. which may become affiliated with the Ont. Assn. when it has a membership of 10 or over upon the payment to the treasurer of the Ont. Assn. of $5 for the first 25 members or fraction thereof above 9 and 25 cents a member for every additional member, which payment shall entitle the members to all the privileges and advantages of membership in the Ont. Assn.

25. It shall be the duty of the officers and directors of the provincial assn. to encourage the formation of such local associations.

26. Fruit growers who are members of 2 or more local assns. shall be accepted as members of the Ont. Assn. from that affiliated association only which is the first to forward their membership fee.

27. Such affiliated assns. may appoint 1 delegate to the annual meeting of the Ont. Assn. for the first 25 members or fraction thereof, and an additional delegate for every 25 members or major portion thereof above the first 25. The actual railway fare of such delegates in attending the annual meeting shall be paid by the Ont. Assn.

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REPRESENTATIVES WANTED.— We want a representative for THE CANADIAN HORTICULTURIST in every district. We will make an unusually liberal offer to all who become connected with us. Write for particulars, Circulation Manager, CANADIAN HORTICULTURIST, 506-7-8 Manning Chambers, Toronto.

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506-7-8 MANNING CHAMBERS - TORONTO

For Vegetable Growers

(*Concluded from page* 314)

Celery culture—3 essays submitted.—1, J. Friendship, Kingston; 2, Geo. Syme, Jr., Carlton West; 3, J. N. Watts.

Onion culture—2 essays submitted.—1, T. Delworth; 2, J. N. Watts.

The sec. was authorized to watch closely any legislation that may be introduced at the approaching session of the Dominion House of Commons, in regard to the tariff on vegetables. As soon as the intentions of the Govt. are known, the various branches of the Provincial Assn. are to be written to that they may consider the Govt.'s proposals. Later, if necessary, a full meeting of the provincial board will be called to consider them. It is possible that a committee from the assn. will be sent to Ottawa to canvass members of the House for or against the proposals of the Govt.

It was decided to hold a series of meetings by the different branches during Jan. and to ask the Supt. of Farmers' Institutes to supply speakers to address these meetings.

A statement presented showed that there were 509 members of the assn., divided as follows: Toronto, 200; Hamilton, 81; Ottawa, 39; St. Catharines and Sarnia, 29 each; Kingston, 27; Seotland and Chatham, 26 each; Brantford and Tecumseh, 16 each; and odd members, 20. The sec's of the local branches will send reports to the sec. of the Provincial Assn. showing the work their branches have done during the year. These reports will be published in the annual report of the assn. Those present at the meeting were: Messrs. F. F. Reeves, pres., Humber Bay; W. A. Emery and R. H. Lewis, of the Hamilton Branch; R. Lankin, Jos. Rush, T. Delworth, G. Syme, Jr., and A. Shuter, of the Toronto Branch; W. C. McCalla, of the St. Catharines Branch; W. A. Broughton, of the Sarnia Branch; Denis Rochelean, of the Tecumseh Branch; Wm. Bushell and Mr. Purdy, of the Kingston Branch; A. McMeans, of the Ont. Agri. College; Peter Carstesten and Wm. Tricks, of the Ottawa Branch, and the sec.

The American Carnation Soc. will hold its annual convention and exhibition in Toronto on Jan. 23 and 24. Florists from all parts of Canada and the U.S. are expected to be present. On Jan. 15 *The Canadian Florist* will issue a special convention number that will include a history of the floral industry in Canada.

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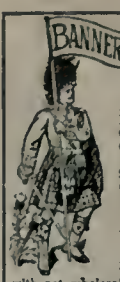

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Conducted by
S. Short, Ottawa

Mature pullets and yearling hens, required for the laying pens, should be separated from the rest of the fowls and placed in the quarters they are to occupy through the winter. The remainder, consisting of the old hens, spare cockerels and very late chicks, should be used for table as soon as they are fit. Any birds that are to be fattened should be confined in a comfortable pen and given plenty of food suitable for flesh-forming. The windows of the pen should be darkened except at feeding time. This keeps the fowls quiet and they put on flesh much faster than if running loose.

Experiments carried on for 3 years with the view of comparing the maturing qualities of White Wyandottes with those of barred Plymouth Rocks, show that White Wyandottes make as much growth in 6 months as the barred Rock in 7. For the last 3 seasons the White Wyandotte pullets have been the first to begin laying. The parentage (an important factor with all stock) of both breeds, were as nearly similar as regards health and outbreeding as could be arranged. The chicks were hatched, in some cases, under the same hen. They were fed and yarded together. The flesh of the Wyandotte is quite as good as the barred Rock. As I keep both breeds, and having no prejudices, I can fairly say that the White Wyandotte is the better breed.

THE CHRISTMAS TURKEY

The Christmas turkey being an important subject at this season, the writer asked the manager of the cooking plant in our leading cooked meat establishment a few directions for the preparation of the fowl before cooking; that is, the dressing and how to choose the best turkey. The following directions were received: Give the preference to a turkey that has no food in its crop. The food sours and causes a taint to the flesh. Dry picked fowls are better than scalded ones. Clean, smooth legs and feet indicate a young fowl. Hang the bird several days after killing and before cooking. Do not open or draw the turkey until immediately before cooking, as much of the flavor is lost through the air drying out the interior of the fowl. In drawing the bird, try and remove the offal intact and then only wipe with a cloth the interior in preference to using water. The juices of the flesh run away with the water. If the above directions are followed and a thick slice of fat pork laid over the breast of the fowl when roasting, the result should be satisfactory to the most fastidious.

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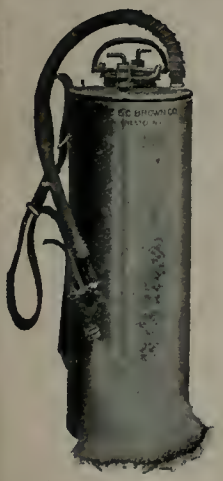

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